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A study was conducted by the Corvallis School District, Oregon, to examine the effectiveness of the use of video tape recording as a self-instructional inservice training tool and as a means of bringing about change in teacher behavior. Over a two-year period, 65 elementary school teachers were randomly assigned to one of five treatment groups formed from the presence or absence of three conditions: (1) self-observation via video tape recording, (2) overt self-evaluation during self-observation, and (3) a workshop in observational and evaluational techniques. Analysis of variance, discriminatory analysis, and chi square techniques were used to analyze the data collected from behavioral measures and questionnaires. It was found that emphasis on individual goal setting combined with video self-evaluation effected moderate changes in teaching methods and attitudes. (Appended are a 27-item list of references, a 193-item annotated bibliography, illustrations of the coding results of the interaction analysis on a one-hour video tape, quotations from teacher observations, a teacher questionnaire and observer rating scale, an organization chart, a list of video tape equipment, a description of the project environment, and tables and graphs. SP 001 634, "An Overview of the Teaching Research System for the Description of Teacher Behavior in Context" by H. Del Schalock, is a related document) (Author/SG)

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A STUDY OF SELF-EVALUATION APPLIED TO IN-SERVICE EDUCATION

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A Division of the Oregon State System
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FINAL REPORT

Project No. 5 - 1121

Contract No. OE - 4 - 051121 - 0981

A STUDY OF SELF-EVALUATION APPLIED TO IN-SERVICE EDUCATION

September 1968

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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Paul H. Jensen
Research Professor

September, 1968

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TEACHING RESEARCH DIVISION

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ABSTRACT

Problem: Although intertwined in the classroom teaching process, research on teaching is often divided into two areas: (1) subject matter and related subject matter methodology; and (2) the interpersonal communications process by which the teacher transmits his attitudes, values, and expectations to the students thus influencing their motivation and behavior. These interpersonal communication processes form the major difference between the human teacher and textbooks, teaching machines and other information-giving devices found in the classroom.

Research in the subject matter area is widespread and the dissemination of knowledge to teachers, through a vast array of workshops and courses, makes improvements of teaching skills in this area relatively easy. The interpersonal communication areas have received much less attention both from researchers and from those trying to improve actual teaching practices.

This lack of research and training derived in part from the difficulties in specifying, within broad limits, what exact behavior, on the teacher's part, is required in a given situation. This aspect of the teaching process has been called an applied art form and seems to be closely related to the teacher's personality or life style. It is difficult to know what changes should be made in the behavior of others, and it is also difficult to change behavior related to personality or life style.

Beittel, however, had developed techniques, derived from Rogerian theory, for working with art students, which suggest interesting possibilities for application to the teaching process. These involve self-evaluation without external standards, and the use of "process feedback,"

i. e., giving the student photographs of his progress on the work currently in process and thus allowing him to evaluate each step in terms of his goals and to change his behavior during the next stage as a result of this evaluation. The use of video recording now makes these techniques applicable to teacher classroom behavior while at the same time forming a carefully codable record of the teacher's behavior for research purposes.

Objectives: The objectives of this research were (1) to examine the applicability of Beittel's techniques of self-observation and self-evaluation to the interpersonal aspects of the teaching process in an effort to change teacher behavior, (2) to examine the effects of a workshop and overt goal-setting procedures on this process, and (3) to collect teacher and student reactions to this technique.

Procedures: Five treatment groups were formed from combinations of the presence or absence of three conditions: (1) self-observation via video recording, (2) overt self-evaluation during self-observation, (3) a workshop in observational and evaluational techniques. Over a two-year period sixty-five teachers were randomly assigned to treatment groups. The study used analysis of variance, discriminary analysis and Chi square techniques to analyze the data collected from behavioral measures and questionnaires.

CHAPTER I

INTRODUCTION

A. History

What can teachers do to improve themselves? In 1964 sixteen teachers of the Professional Improvement Committee of the Corvallis Public Schools discussed ways and means of answering this question for themselves. In their study the teachers found that there had been a great increase in the variety of academic offerings available to teachers for increasing their knowledge of *subject matter and subject matter methodology*. Workshops and seminars, night classes and summer school courses had proliferated into a vast array of evidence of the fact that attempts were made to confront teachers with the problems of education today. However, very little attention had been devoted to other aspects of teaching, namely *communication processes* by which the teacher transmits his attitudes, values, and expectations toward the individual students, the subject matter taught and the entire school situation. It is through these processes that the teacher influences students' motivation toward the subject matter and the school, and ultimately affects student behavior. These interpersonal communication processes form the major difference between the human teacher and textbooks, teaching machines, and other information-giving devices found in the classroom. But research on this aspect of teacher behavior was scanty and research on effective methods of changing this category of teacher behavior, employing behavioral measures as criteria, was almost non-existant.

One of the factors behind the paucity of research on changing this aspect of teachers' behavior was undoubtedly the difficulty in specifying, within broad limits, the exact behavior required in a given situation. As Stern (1963) points out, teaching is an applied art from centering around the creative "communication and projection of essentially private experiences." Follis (1961) puts it this way: "Teaching preactices and related teacher-pupil relationships are highly personal and individual matters." Since the pattern of communication developed in the classroom is closely related to the teacher's personality or individual life style, it is difficult for others to tell what changes should be made.

Not only is it difficult to know what changes should be made in behavior of others but also, as art teachers and psychoanalysists testify, it is difficult to change behavior closely related to a person's "style" or "personality". Beittel, however, (1963, 1964, 1964b, 1964c) has developed some interesting techniques for dealing with an analogus problem with graphic art students. He found that students' own "self-discovered criteria" for evaluation and "process feedback," that is, the viewing of a photographic record of the process of creating the work currently in progress, were the most powerful factors in the production of highly rated pictures. These processes were contrasted with teacher evaluation and criticism, the usual practice, and with "product feedback" photographs of previously competed works.

Biettel's research was seen to support Rogers' theory of creativity (Rogers, 1954), stressing that the "locus of evaluation" must be internal rather than external. His research was found to be consistent with the concept of a basic motive-force in therapy and in life, displaying "man's tendency to actualize himself" or strive to achieve self-improvement in the direction of an ideal self (Rogers and Dymond, 1954). From a Rogerian point of view, then, the creative process may best take place in a situation which permits self-evaluation in the absence of external evaluation, and which allows the individual to approach his conception of an ideal self. These elements were apparently present in Biettel's studies.

In reviewing Biettel's approach, the Professional Improvement Committee felt that his method might profitably be applied to the process of improving and encouraging creative teaching in the Corvallis schools. To this end the committee's planning was ultimately directed, with their efforts resulting in the development of a formal proposal for a program of teacher self-evaluation.

B. Underlying Assumptions

The proposal to improve teaching through self-evaluation was based upon certain rather obvious assumptions or necessary conditions. These were that:

1. If given an oppotunity to observe and evaluate themselves, teachers might want to change their behavior in order to be more effective and more competent in the classroom;

2. By repeated replay of video tape recordings of teacher-pupil interaction (away from the pressure of the classroom) teachers would be objective in their evaluation of the teaching process; and

3. Teachers having been professionally trained and having been involved in the teaching process would be capable of changing their own behavior.

C. Pilot Project

To test these assumptions a Pilot Project was initiated for video taping classroom teaching. The Chief Investigator had two 16 mm films made of his teaching (portable VTR's were not readily available in 1964). After self-observation and self-evaluation the film was shared with the Professional Improvement Committee, and five other teachers volunteered for the same treatment.

At this point the Committee added the following controls governing the use of films or tapes of classroom teaching:

1. No "staging" for cameras. Regular lessons for the day to be used.
2. Only the teacher to observe and evaluate film.
3. Teacher to have full control of the use of film.

With written permission from each teacher excerpts from all the films were then shared with the 500 teachers in the Corvallis Public Schools. Unanimously, the teachers approved the Pilot Project and requested the School District to assist in the implementation of a teacher self-evaluation program.

D. Related Research

Before initiating a formal proposal the Professional Improvement Committee, an advisory committee of three school administrators, and the staff at Teaching Research Division of the Oregon State System of Higher Education, investigated related research. One outcome of the investigation is the extensive annotated bibliography which is appended to this report. Several of the related studies from the reference list are discussed below.

1. Problem of Measuring Interpersonal Behavior

It was found that one reason for the lack of research on teachers' interpersonal behavior was the difficulty of accurately measuring it. The Association for Supervision and Curriculum Development booklet, Better than Rating (1960), states many of the inherent difficulties in classroom observation. Medley and Mitzel (1963) spend many pages attempting to deal with the criticisms of observational techniques, and the list goes on and on. Although observational techniques and instruments are steadily improving, the old difficulties of observer reliability and validity, of the impact of the observer on the classroom situation, and of the difficulties of interpreting observations to others remain.

2. Video Recording Provides Permanent Record of Teaching Behavior

Research related to this study also includes student teacher evaluation using closed circuit television (Allen, 1964), student teacher and inservice teacher training using closed circuit television (Keller, 1961), and the improvement of cognitive teaching skills through repeated self-observation via video recordings (Bush and Allen, 1964). Studies of counselor self-observation via video recording (Walz and Johnston, 1963) and of self-viewing of physical skills also related to this study (Smith, 1961). However, no research combining the elements of repeated self-observation and self-evaluation without external standards, and with focal concern for interpersonal behavior, was evident in published literature. Furthermore, no study using behavioral analysis as a criterion of effectiveness was found.

Although none of these studies combine the important elements of the proposed study (i.e., a concern for change in interpersonal behavior as a result of repeated self-observation and self-evaluation), they do provide some evidence that these factors individually have some impact on behavior. Bush and Allen, (1964) utilized repeated self-observation in the training of student teachers of cognitive skills in a tutorial stiuation. Unpublished reports from the Wayne State Study indicate they allowed teacher self-observation but did not require it and they made only a single recording of each teacher's behavior. Schueler (1964) found kinescope recordings helpful in student teacher training, while the counseling studies found that change occurred after self-observation, and the pilot study for this proposal indicated that a desire for change in behavior was generated after a self-observational and self-evaluational experience. The Corvallis Project was designed to test unified combinations of the above named variables in an effort to provide evidence relating to both their theoretical background and to practical application of newly developed techniques.

Although the use of video recordings of classrooms has by no stretch of the imagination solved the problems of observations mentioned above, it provides a technique which lessens some observational difficulties. Video recordings provide a permanent record of behavior so that each bit of behavior may be observed many times during processes of analysis. Careful time-consuming coding procedures are usually required to raise reliability and insure objectivity (Medley and Metzel, 1963), while behavior can be analyzed against other measures more easily with a permanent record to establish validity. Video recordings, furthermore, can remove some of the influence of outside observers, as was shown in a study of Follis (1961) which indicated that teachers and students found remote-controlled cameras less disturbing than observers. Finally, since video recordings form a permanent record, attempts to communicate interpretations of observations may be buttressed by actually viewing the behavior sequence desired. For these reasons remote-controlled video recording techniques open new possibility for self-observation, and they provide new mthods for creating conditions favorable to self-evaluation and self-motivated changes in behavior.

E. Objectives of the Study.

In light of Biettel's research, the compelling nature of Rogerian theory, and the potential apparent in video-tape procedures, the Corvallis Professional Improvement Committee planned for a teacher self-improvement project having both research and practical implications. Substituting video-tape observation for the photographic method employed by Biettel, and assuming teaching to be a process, with video-tapes as products, it was possible to apply the Biettel paradigm to the study of teacher self-improvement. Rogerian theory provided a logical framework for the project and promised self-initiated and self-directed improvement in teaching.

1. The major objective of this study was to examine the effectiveness of the use of video recording as a self-instructional in-service training tool and as a means of bringing about change in teacher behavior.

Two additional objectives represent attempts to identify minimum procedures necessary to produce changes in behavior. These were:

2. To assess the effectiveness of a special in-service workshop for participants in the self-evaluation program, and to differentiate workshop effects from the effects of self-observation and self-evaluation via video recording; and

3. To differentiate the effects of overt goal-setting and self-evaluating procedures from those of self-observation alone.

Given the opportunity to change their teaching, it is of interest to know:

1. In what respects will teachers show the greatest change under the impact of self-evaluation using video recording?[1]
2. What categories of behavior are most stable throughout this experience?

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[1] Using the classroom observation instrument developed by Beaird, Schalock and Simmons, as outlined in Appendix A.

CHAPTER II

METHOD AND RESEARCH STRATEGY

A. Research Plan

The general plan of research was to compare changes in performance among five randomly assigned groups of inservice teachers on criterion measures for recording teacher behavior developed by Schalock, Beaird, Simmons (see Appendix A). The five groups represent the presence or absence of three conditions: (1) a workshop experience dealing with observation, self-evaluation, and goal setting; (2) self-observation via video recording; and (3) overt self-evaluation via video recording. The design permitted the investigation of effects of self-evaluation procedures using video recording, workshop experience, and overt self-evaluation procedures on behavioral change. The research design for the study is outlined in Table 2.1.

B. Participants

Based on their experience in the pilot program and on information provided by the Professional Improvement Committee, thirty-two teachers volunteered to participate the first year of the study. Twenty-one of these participants were assigned to Experimental Group I, where they would receive preliminary workshop experience as well as being involved in goal setting and video self-observation. The remaining eleven teachers comprised Control Group II, which received both workshop and goal-setting experiences, but which did not have the opportunity for self-observation or self-evaluation by means of video tape until all three recordings had been completed. During the second year of the study, encouraged by first

Table 2.1. The research design around which the Corvallis self-evaluation project was organized.

EXPERIMENTAL DESIGN

		Self-Observation	Workshop	Goal-Setting
Year I 1966-67	Group I (n-21)	x	x	x
	Group II (n=11)	0	x	x
Year II 1967-68	Group III (n=11)	x	x	0
	Group IV (n=11)	x	0	x
	Group V (n-11)	x	0	0

year participants, an additional thirty-three teachers volunteered for video self-evaluation. These individuals were divided equally into three control experimental conditions, as outlined in Table 2.1 above.

The teachers who involved themselves in this project represented a range of teaching experience from fewer than two to more than thirty years, with the majority having between three and ten years of classroom teaching experience. The sample was approximately evenly divided between males and females, with an age range from 23 up to 64 years. Participation was limited to teachers between grades three and eight, and the final sample represented teachers from sixteen different Corvallis schools. In all cases teacher involvement was entirely voluntary.

C. Equipment.[2]

The video tape equipment used in this project consisted of an Ampex 7100 for production purposes and an Ampex VTR 7000 for tape replay. A Packard Bell 920 remote controlled camera with wide lens and a Packard Bell 9200 camera (manually controlled with zoom lens) were used to focus on teacher-student interaction. The teacher had a Vega microphone to allow freedome of movement, while four floor microphones were provided for students. To avoid unnecessary noise and distraction during production the VTR unit was located in the hallway. During recess the cameras would often be relocated to focus on different aspects of the instructional program.

D. Procedures

A two-day workshop was held in Corvallis at the beginning of each school year for the benefit of all participating teachers, except those who were assigned to Groups IV and V. This workshop, which was conducted by the Principal Investigator and staff members of the Teaching Research Division from Monmouth, was designed (1) to orient teachers to the Project, (2) to train them in specifying instructional objectives or in goal setting, and (3) to familiarize them with video tape recording equipment.

Immediately after the workshop arrangements were made to visit each of the classrooms. Three visits were planned with the teachers for the purpose of making video recordings of their teaching behavior.

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[2] For detailed list of equipment see Appendix E.

The principal data collected and the basis for self-observation and self-evaluation were three individual recordings sampled at eight-week intervals during the school year. The recordings consisted of the combined input from two cameras, a fixed wide-angle lens camera at the front of the classroom to record student behavior, and a remote-controlled camera with zoom lens to record teacher behavior. Teacher and student microphones were used to record sound. For view purpose the teacher image appeared on one corner of the screen and the students' on the rest, so that both could be viewed simultaneously and interaction effects observed. This record was coded, using Schalock's coding procedures (see Appendix A), with the resulting frequency and ratio serving as the major evidence of change through this experience.

During the three recording sessions every effort was made to keep the classroom as natural and undisturbed as possible. In Groups I, II, III, teachers were were asked to specify beforehand the objectives to be taught. They discussed with the Principal Investigator an approximate time schedule for types of activities planned, and they were urged to emphasize activities involving maximum interpersonal activities, such as discussions and small group work. Immediately after each recording session, for teachers in the appropriate treatment groups, a substitute teacher took over the class while the teacher engaged in self-observation and self-evaluation in a separate room. These viewings were each followed by a taped interview between the teacher and project director.

E. Collection of Data

Four sources of information were utilized in evaluating the effects of the video tape self-evaluation procedures employed. These included (1) the analysis of each teacher's three video recorded classroom sessions by application of Schalock's observation system; (2) the synthesis of teacher comments obtained during each post-recording interview; (3) the results of a teacher questionnaire administered at the close of the school year, and (4) spontaneous written information provided by the majority of teachers.[3]

Each video tape was analyzed by staff members of Teaching Research using the Schalock method which permitted descriptions of category ratios, the specific meaning of each being described elsewhere in this report. These category ratios include such behavior tendencies as (1) degree of control, (2) orientation to power in obtaining control, (3) teacher response to deviant behavior, (4) orientation to positive reinforcement, (5) consideration in response to academic initiations, (6) consideration in response to non-academic initiation, (7) sensitivity of response to non-academic behavior, (8) affective orientation, (9) approachableness, (10) individual vs group focus, and (11) use of inquiry in instruction. A category was included in the analysis only if it had sufficiently high frequency to be considered reliable. Past experience indicated that a minimum frequency of 2000 would be necessary for high reliability, so that this level was selected in the present study. Statistical analysis was accomplished by comparing the decimal equivalents of each mean category ratio between video tape sessions (trials) for each group, and then applying an analysis of variance to the resulting data. Rank order comparisons were also made to determine relative differences between treatment groups.

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[3] See Appendix B for spontaneous teacher reactions.

By reviewing the taped interviews which followed each self-evaluation session it was possible to identify the most frequently occurring comments and reactions on the part of the participants toward aspects of the project. These reactions are appended to this report to supplement information presented in the Results chapter.

A third set of data was obtained by means of an open-ended questionnaire, filled out by participants at the end of their project experience. These questionnaires were subjected to analysis by two impartial observers in terms of the scale described in Appendix C. Results from this analysis were intended to reflect on such things as the teacher's overall attitude toward the project, perceived changes in teaching or attitudes toward teaching, increased sensitivity toward students and self, the extent of positive or negative self-evaluation, and the amount of anxiety displayed toward participation in the study. A copy of the teacher questionnaire and observer scale is found in Appendix C of this report.

Below is a calendar of events giving a time perspective to the activities described in the preceeding pages:

APPROXIMATE TIME SCHEDULE

July 1, 1966 - September 20, 1966	Training of experimental crew, preparation and conducting of workshop. Modification and installation of television equipment. Collection cf volunteers, sample selection, treatment group assignment.
September 15, 1966 - March 30, 1967	Data Collection
April 1, 1967 - August 15, 1967	Data analysis and reporting, preparation for the second year's data collection.
August 16, 1967 - September 15, 1967	Collection of volunteers, sample selection and group assignment; two-day workshop.
September 15, 1967 - March 30, 1968	Data Collection
April 1, 1968 - September 15, 1968	Data Analysis and final report

CHAPTER III

RESULTS

The results point to modest positive changes in teacher behavior and attitudes due to participation in the self-evaluation project.

Analysis of the video tapes

Application of Schalock's system, in the manner described in the last section of the previous chapter, revealed moderate but statistically significant changes in certain teacher behaviors. The focus of attention came on categories 4, 9, 10 and 11, since these were the only ones occurring with a sufficiently high frequency to be seriously considered on a purely statistical basis. These behavior categories, defined in detail in Appendix A, included (1) orientation to positive reinforcement, (2) approachableness of the teacher, (3) emphasis on individualized instruction rather than group focus, and (4) use of inquiry techniques in the classroom. Table 3.1 shows the group means[4] in terms of differences between trials for each of the treatment groups. Significant F's are noted for categories 9, 10, and 11. In all cases, Group II (no self-observation) ranked lowest with respect to these three behavior categories,[5] thus suggesting the probable value of self-observation for effecting behavior change toward increased approachableness, increased focus on individual students, and greater use of inquiry techniques.

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[4] These are reported in terms of decimal equivalents of category ratios. (See Appendix A on ratios.)

[5] See Appendix for detailed data.

Table 3.1. Trial or session differences and statistical comparisons between treatment groups in terms of categories 4, 9, 10, and 11 of Schalock's system.

		TREATMENT GROUPS					
Cate-gories	Trial Diff.	Group 1	Group 2	Group 3	Group 4	Group 5	F's
4	1-2	.09	.13	.09	.12	.15	0.73
	2-3	.17	.19	.07	.14	.09	1.48
	1-3	.17	.20	.03	.13	.14	1.59
9	1-2	.08	.06	.17	.09	.18	1.94
	2-3	.07	.08	.05	.11	.17	1.39
	1-3	.07	.07	.16	.09	.20	2.83*
[illegible]	1-2	.10	.04	.13	.28	.16	2.32
	2-3	.13	.05	.15	.35	.14	4.36**
	1-3	.14	.06	.21	.26	.11	2.18
12	1-2	.11	.06	.08	.05	.15	2.67*
	2-3	.14	.06	.10	.08	.11	1.46
	1-3	.13	.08	.07	.10	.12	2.73*

* $P < .05$
** $P < .01$

Teacher Questionnaire Results[6]

A review of the rating scales for the teacher questionnaire indicated that all teachers displayed moderately high positive attitudes toward participation in the project, except in the case of the control subjects in Group II.[7] These teachers, who had workshop and goal-setting experience but no self-observation, showed ambivalent or indifferent attitudes toward their participation. This tends to affirm the value of self-observation with respect to increased positive teacher attitudes.

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[6] See Appendix H for graphs and further information.

Evidence of self-perceived changes in teaching behavior was cited with moderately high frequency in the teacher questionnaire ratings, with somewhat higher but non-significant frequencies noted for Group I and V teachers. Most teachers perceived some changes in positive attitude toward teaching, with Group IV teachers showing the least frequent indication of change.

With respect to the questionnaire item dealing with increased sensitivity to students, there was a somewhat higher frequency noted for teachers in Group III (self-observation and workshop) and a relatively low rating for Group II subjects (no self-observation). These differences, however, are based on low observer reliability for this particular item, and the group means are not statistically significant. Yet, item 5 on the questionnaire, increased self-awareness, which is closely related to sensitivity to others, showed a similar pattern. This suggests that teachers having self-observation on video-tape tend to become more sensitive and aware of interpersonal aspects of their teaching. A further interesting trend in the teacher questionnaire data was the fact that Group II teachers (no self-observation) displayed less concern with positive self-evaluation (i.e., making statements which indicated positive changes in teaching) than did those teachers in the groups involved with video self-observation. These differences were not as striking, however, in terms of "negative" self-evaluation, although Group II teachers were lowest here too.

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[7] The observed difference was statistically significant at the .05 level.

A final outcome of the teacher response to the questionnaire was the moderate but pervasive apprehension on the part of teachers in Groups I, II, and III, with comparatively high anxiety in Groups IV and V, toward participation in the project (i.e., self-evaluation and observation). A certain amount of apprehension is expected, of course, in the face of criticism and increased attention to personal shortcomings. This seems to be a necessary condition for change.

Additional information on the results of teacher self-evaluation, representing an analysis of teacher interviews and spontaneous teacher reactions, will be found in Appendix B of this report. These supplementary findings are generally highly favorable to the study.

CHAPTER IV

DISCUSSION

A. Limitation of the Study

The research design did not allow any discussion or evaluation of the video tape except by the teacher himself. In the interview the Director could merely ask:

1. What did you see that was positive about yourself?
2. What did you see that was positive about your teaching?
3. What did you see that was negative about yourself?
4. What did you see that was negative about your teaching?
5. If you were to repeat this lesson what would you change?
6. What behavioral changes do you expect to make before the next taping?

The Director made no comment on the teacher's answers, although such comments were constantly sought. All ideas for change in teacher behavior were to originate in the teacher. To many teachers this part of the Project was frustrating.

The Project should be extended to include consultation with members of the academic community. Faculty members at Oregon State University and Oregon College of Education have expressed their willingness and desire to serve as consultants to the Corvallis teaching staff.

B. Workshop

The two-day workshop removed much of the apprehension and anxiety for teachers in the appropriate groups. Their questions could be discussed and answered within the research design. Familiarizing themselves with the operation of cameras and video-tape recorders seemed to give teachers added confidence, while writing behavioral objectives added much interest and meaning to the Project. This allowed teachers to evaluate their performance against desired goals.

C. Problems Encountered in Production

With a mobile van the Ampex VTR 7100 and two cameras were moved from school to school without incident. During the two-year project we produced 663,000 feet of video-tape for Teacher Self-Evaluation. No teacher or technical staff missed a scheduled taping.

Teachers were helpful in suggesting locations where cameras would not interfere with the ongoing lesson and at the same time be in a favorable position to focus on the classroom activities.

After a few minutes of classroom activities students ignored the presence of cameras . (The VTR was in the hallway.) The students becoming involved in the lesson would then demand the full attention of the teacher, who was usually the last one to ignore the cameras and the Director.

It should be noted here that the remote-controlled wide lens camera drew more attention from students than the large TV studio type manually operated camera. This was due to motor noise and to the fact that it could pan and tilt without human presence. Only two teachers indicated apprehension over the presence of the cameras. Most teachers felt that they had accepted the video-tape method as a valuable adjunct to teacher training and to teacher self-evaluation. They also saw it as a necessary piece of equipment to be used in recording pupil learning experiences and pupil self-evaluation.

D. Outcomes of the Study

When the Corvallis Pilot Project was initiated in 1964 some teachers had a feeling of apprehension about the Project. Some even felt that video-taping the teacher was a violation of the privacy of the classroom and a threat to the teacher's image. This proved to be a concern over the use of such tapes rather than over the production. However, because of the controls built into this Project to protect the teacher regarding the use of the video-tapes, teachers participated without hesitancy or reservation.

To the teacher these controls proved to be an important factor, since all previous evaluations had been for administrative use by such persons as principals and superintendents. In this study it was self-evaluation for self-improvement. The teacher could now observe himself and evaluate his own strengths and weaknesses. For a few, this self-observation and self-evaluation proved to be a traumatic experience. However, for all but two teachers it proved to be helpful and constructive in building self-confidence as teachers.

Since the teachers were the only ones to evaluate their teaching they were anxious to see how well they really could teach, yet this attitude did not prevent them from being personally and professionally honest. They found fault with their best teaching. Significantly enough this served to be an encouragement rather than a discouragement, for, while the teachers observed some negative aspects of their teaching, they saw positive evidence of what they considered good teaching. A positive teacher image emerged and sufficient self-confidence so as to make the changes in behavior necessary for more competent and more effective teaching.

In his self-evaluation the teacher was often "hard pressed" for answers and explanations to observed problems in behavior. He sought help from the Director, fellow teachers, instructional materials, and often from students. He felt that something needed to be done, but at the same time he tried to avoid excuses and "covering up." Very frequently he looked for pupil change as evidence of his own competency.

In their own written evaluations the teachers mentioned some of the changes in behavior which they felt they had made. Change, as the teacher sees it and feels it, may not be easily measured by someone else. However, if the teacher said that he had changed his behavior in order to be a more competent and effective teacher his testimony should be accepted as fact. Such change may be reflected in a more positive attitude toward himself, his profession, and his students. It may also be reflected in sensitivity toward students' needs.

CHAPTER V

SUMMARY

Teacher self-evaluation was designed as an in-service teacher self-instructional tool to change teacher behavior. To attain this goal more than seventy teachers participated in this research project. The teachers were divided into five groups - one experimental and four control groups. Each had at least eleven teachers.

At the beginning of each year a workshop was held in accordance with research design. The purpose was to orientate participants in the research project, to show them the need for behavioral objectives, and to teach them how to operate video tape equipment.

First year teachers in grades four through six participated, and second year teachers in grades three through eight. Each teacher was taped one full hour at approximately two month intervals. Only the lesson in sequence was to be taught for video taping. During the afternoon the teacher would observe and evaluate himself by seeing the video tape at least twice, and would then have an interview with the Project Director.

Each video tape was then coded by the research staff and an interaction analysis given to each teacher in form of a profile.

As a protection for teachers some controls were built into the Project. The teachers who voluntarily participated could determine who, apart from the research staff, would view the video tapes. For example, no school administrator nor fellow teacher saw the video tapes without written permission from the teacher. Knowing this the teacher could teach freely without inhibition.

In most instances the impact of observing themselves had a positive effect and resulted in increased self-confidence as persons and as teachers. In all instances, however, the observations did arouse an attitude of concern regarding their own competence and effectiveness as teachers. Such questions as "Am I doing the right thing?", "Where can I improve?", "What do you think of my teaching?" were asked by the teachers, but could not be answered under the present research design. The questions are, however, an evidence of the effectiveness of this method of bringing about an attitude which makes change in teacher behavior possible.

The self-observation experience became also one of readiness to change with outside aid, rather than one that precipitated great individual change in teaching pattern. The project treatment, that is, viewing oneself acting out one's vocational role, precipitated both feelings of self-confidence in their vocational competencies and a readiness to engage in a rigorous, sophisticated analysis, evaluation, and improvement in their teaching behavior repetoire.

Recommendations

1. The idea of teacher self-evaluation should be extended to include consultation with members of the academic community, such as educational psychologists, speech therapists, content scholars, and philosophers.

2. School districts should make video recorders available to teachers for self-observation and self-evaluation purposes. This can be done for as little as $2000 per VTR unit (half- or quarter-inch tape may be used over 300 times). Three elementary schools are under construction or on the drawing board--Corvallis (Oregon), Las Vegas (Nevada), Powell (Wyoming)--which plan to have teacher self-evaluation as a regular part of the in-service program.

3. Such equipment could also serve for student self-observation and self-evaluation. (This use was experimented with in May, 1967, and again in May, 1968. It was found to be effective in bringing about change in student attitude, improved work habits, and desire for excellence).

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Medley, D. M. & Mitzel, H. E. Measuring classroom behavior by systematic observation. In N. L. Gage (Ed.), Handbook of research on teaching. Chicago: Rand McNally, 1963, 247-328.

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Smith, Hope M. & Clifton, Marguerite A. The viewing of oneself performing selected motor skills in motion pictures and its effect upon the expressed concept of self in movement. USOE Grant No. 704105, Title VII Project, No. 486, University Microfilms Publication No. 63-2863. Los Angeles: University of California, August, 1961, 20 (mimeographed).

Stern, George C. Measuring noncognitive variables in research on teaching. In N. L. Gage (Ed.), Handbook of research on teaching. Chicago: Rand McNally, 1963, 398-447.

Stoller, N. & Lessor, G. S. The use of television for improving teacher training and for improving measures of student-teaching performance. Phase II. A comparison of methods of observation in pre-service teacher training. U. S. Office of Education, Grant No. 730035. New York: Hunter College, University of New York City, 1963.

Walz, G. R. & Johnston, J. A. Counselors look at themselves on video tape. Journal of Counseling Psychology, 1963, 10, (3), 232-236.

Selected Bibliography - With Annotations

The main purpose of this bibliography is to provide a ready source for the reader seeking fuller understanding and means for evaluation of the results of the Jensen Teacher Self-Evaluation Study. It is felt that, in addition, the bibliography can function as a significant heuristic device for those interested in undertaking new research or making new applications of videotape recording and interaction analysis.

There are two main sections to the bibliography corresponding to those of the Jensen report; i.e., Teacher Self-Evaluation via viewing videotape recordings, and Interaction Analysis. The first section is further organized into three subsections: reviews; research oriented studies; and applications - the latter covering micro-teaching plus more general applications from the literature on industrial and military training. Subsections for the interaction analysis citations did not prove feasible as so many comprehensive treatises cover many areas of the topic.

Beginning on page 31 there is a compilation of relevant studies taken from the ERIC (Educational Research Information Center) abstracts. The abstract service began in 1965, and it appears that it is now the single most fruitful source of information on the two topics covered by this bibliography, i.e., as they apply to education. The abstracts have been copied verbatim as they appeared in the ERIC volume consulted. The information needed for ordering copies of the studies is included here. For those not familiar with the ERIC system, the address to be used for ordering is: The National Cash Register Company, Box 2206, Rockville, Maryland 20852.

The reader should be aware that the bibliography was developed entirely through library resources and the selections were made with the availability of the material in mind. It should also be noted that concentration has been made on the location of reviews of the literature in both the areas of videotape self-evaluation and interaction analysis. By consulting these reviews, the scope of the problems and research findings in teacher evaluation can be appreciated with a minimum expenditure of time in literature search. Those studies found to be relevant and not included in reviews, however, are set forth here. For the most part these studies are dated 1965 and later.

Teacher Self-Evaluation

Reviews

Adkins, Edwin P. (Ed.) Television in teacher education; a report on the possibilities of television for the education of teachers, for college instruction in general and for public schools. Washington, D. C.: The American Association of Colleges for Teacher Education, 1960, 72.

Describes some of the possibilities of television for the education of teachers, for college instruction in general, and for public schools. Prepared by the Subcommittee on Television and Teacher Education of the American Association of Colleges for Teacher Education. Chapter 4 notes the experience of the State University College of Education, Albany, New York that "one of the most effective techniques which can be put to use in the supervision of student teachers is to make it possible for the student to see himself in action."

Brown, James W. & Thornton, James W. New media in higher education. Association for Higher Education and Division of Audiovisual Instruction, National Education Association. Washington, D. C.: Association, 1963, 182.

A survey of the present character of the uses now being made of audiovisual media by colleges and universities throughout the nation. Includes closed circuit as well as broadcast television, films, language and listening laboratories, programed instruction, self-instruction laboratories and transparencies and overhead projection and video tapes.

The use of video tape playback to allow self-critiques is mentioned in several articles.

Bosley, Howard E. & Wegrier, Harold E. Television and related media in teacher education; some related practices. Baltimore, Maryland: Multi-State Teacher Education Project, 1967, 53.

In a series of 20 articles written by authorities on the use of television in teacher education, this new M-STEP (Multi-State Teacher Education Project) bulletin describes a variety of practices which are assuming a state of sophisticated experimentation in teacher preparation institutions operating in widely distributed geographic regions of the United States. The scope of the practices explained in the articles ranges through a series of categories which have been classified as follows: video tapes as substitutes or supplements for classroom and child group observations; as self-appraisal process for student teachers; as a means of providing instruction in the skills and techniques of teaching, including microteaching; simulation of practical teaching situations; ...telecourses and teleconferences for preservice and in-service development of teachers....

Cyphert, Frederick R. & Andrews, L. O. Using the videotaper in teacher education. Audiovisual Instruction, 1967, 12, (10, December), 1067-1069.

Reviews present practice and research in the use of the videotaper in teacher education. Notes that the research literature is sparse, but reports of practice are becoming relatively common. The reports are found to indicate two primary uses: the videotape recording of teaching activity as a substitute for classroom observation, and the recording of the performance of a student teacher at work.

Gibson, James W. Using videotape in the training of teachers. The Speech Teacher, 1968, 17, (2, March), 107-109.

Attempts to identify and evaluate selected methods for the use of video tape in speech teacher training. Reviews research on video tape use in microteaching, model teaching and rater training. Suggests use in training for speech criticism and verbal interaction.

Lesser, Gerald S. & Schueler, Herbert. New media research in teacher education. AV Communication Review, 1966, 14, (3, Fall), 318-361.

An analytical report with the stated major objective of answering the question: what evidence is there that the use of the new media will result in more effective learning of the several teacher competencies that are basic to the teaching function?

Notes that rigorous empirical research on the applications of new media in teacher education is scarce and of recent origin. Relevant section is "The Role of New Media in Providing More Efficient Self-Instruction and Supervised Practice Experiences". Reports only one instance of a study suggesting superior performance after six months of actual teaching experience by teachers prepared by video tape and voice tape recordings as compared to student teachers who received only the conventional critique. (146 references)

Reid, J. Christopher & MacLennan, Donald W. Research in instructional television and film: summaries of studies. U. S. Office of Education, No. 34041. Washington, D. C.: U. S. Department of Health, Education, and Welfare, Office of Education, 1967, 216.

Of three-hundred and thirty-three references, only two (Smith, 1961 and Tintera, n. d.) relate research oriented studies concerned with self-analysis via videotape.

Schueler, Herbert & Lesser, Gerald S. Teacher education and the new media. U. S. Office of Education, Project No. 3-16-005. Washington, D. C.: American Association of Colleges for Teacher Education, 1967, 122.

A comprehensive review of the literature on the new media and its implications for teacher education. Includes as background, trends in teacher education, functional characteristics of teacher education programs, functional characteristics of new media. Presents research findings under present status of media research in teacher education, methodological issues in media research, and research evidence on the role of new media in teacher education. In "a look ahead" (p. 91)

states that "possibilities for new media in teacher education have neither been verified through research and experimentation (at least by the kind of research that, by its nature and process, can be considered meaningful) nor yet had sufficient study for proper conclusions and applications to be drawn...." (467 references)

Simpson, Ray H. Teacher self-evaluation. New York: Macmillan, 1966, 100.
A concise statement of the need for and problems involved in teacher self-evaluation. The contents include: (1) Why is teacher self evaluation needed?; (2) Self-evaluation: procedures and tools; (3) Self-evaluation and a new position; (4) Knowledge and teacher self-evaluation; (5) Self-evaluation in developing goals and procedures; (6) Self-evaluation in the selection of texts and other resources; (7) Self-evaluation and personality; and (8) Self-evaluation and interpersonal relations with colleagues.

Recognizes the value of audiovisual devices, but does not provide a review of them.

Research-Oriented Studies

Acheson, K. A. The effects of feedback from televised recordings and three types of supervisory treatment on selected teacher behavior. Unpublished doctoral dissertation. Stanford University, 1964.
Reports that supervising student interns with the use of video tape recordings of teaching sessions is significantly more effective than supervision without the visual record.

Allen, D. W., McDonald, F. J., & Orme, M. E. J. The effects of feedback and practice conditions on the acquisition of a teaching behavior. Stanford, California: Stanford University, 1966.

Beittel, Kenneth R. On the relationships between art and general creativity. School Review, 1964, 72, (3), 272-288.
Discussed the relationship between creative process and finished product in art. The investigators took a series of still pictures of students' art work as it was being produced in the classroom. Instructors reviewed these pictures with the student and a tape record was made of the students comments on his evaluations of progress toward his goals for the finished product. The authors identified three major processes of art production which they termed (1) the spontaneous-holistic strategy, (2) the divergent synthetic strategy, and (3) the academics.

Fischler, A. S. Change in classroom behavior resulting from an in-service program utilizing television. School Science and Mathematics, 1967, 67, (April), 321-324.

Describes the use of video tape recordings in a four-week in-service training program at Nova University, Fort Lauderdale, Florida. In the mornings, the teachers taught grades two through eight for approximately four hours. Each morning one teacher was video taped for approximately an hour. In the afternoon for one hour the workshop director presented a theoretical model of teaching; then, the group as a whole observed the video tape of the morning teaching. Each tape was analyzed from three points of view: (1) what patterns could be observed in the teaching performance; (2) what effect did these patterns have on the children; (3) how what was observed, patterns and student behavior, related to the objectives from the individual lesson.

In the fall an attempt was made to evaluate the summer program by determining whether the teacher participants in the workshop as a composite were any different in their teaching behavior than the other teachers in their district. For this purpose, visits were made to the teachers, observational data were submitted by their principals and the teachers themselves submitted questionnaires on their attitudes. The author expressed enthusiasm for the worth of the workshop techniques.

Hirschfeld, Adeline Gittlen. Videotape recordins for self-analysis in the speech classroom. The Speech Teacher, 1968, 17, (2, March), 116-118.
Report of the results of testing videotape recorders at Wayne State University in a 1964-65 study made under an NDEA Title VI grant.

Johnson, F. Craig, and others. An investigation of motion picture film and the program analyzer feedback to improve television teacher training. Speech Monographs, 1963, 30, 373-376.
Investigated the possibility that several different devices for providing feedback to television instructors might increase their effectiveness. Public school teachers taught a ten-minute lesson three times. After each lesson they were given feedback of different kinds concerning the effectiveness of their performances. Each then prepared a new fourth lesson for final rating.

The devices used for providing feedback to the teachers were: (1) audio tape recordings; (2) sound-films, and (3) a program analyzer, which provided them with their listener's evaluations on a five-point scale every forty-five seconds. As they received these evaluations, they also either listened to the recording of their performance or observed the sound film. In general, no significant improvement in teaching effectiveness as measured by rating scales, was realized as a result of the feedback. No significant differences between types of feedback was found although a temporary disruption of performances resulted for the use of the program analyzer.

McDonald, F. J., Allen, D. W., & Orme, M. E. J. Effect of self evaluation and social reinforcement on the acquisition of a teaching behavior. Stanford, California: Stanford University, 1966.

Orme, M. E. J., McDonald, F. J., & Allen, D. W. *Effect of modeling and feedback variables on the acquisition of a complex teaching skill*. Stanford, California: Stanford University, 1966.

Muslin, Hyman L. & Carmichael, Hugh T. Exercises in self-observation: a workshop for instructors in psychiatry. *American Journal of Psychiatry*, 1967, *124*, (2), 198-202.

Describes a method of observing the teaching of clinical psychiatry based on the filming of teacher-student dyads; showing of the film is followed by "group supervision" of the instructor by a workshop group. The method is aimed at the formation of a group alliance to derive insights into the complicated transactions of student and teacher.

Poling, E. Gordon. *Video tape recordings in counseling practicum*. NDEA Title VII, Project No. 1235. Vermillion: University of South Dakota, n.d., 71.

Investigates several methods of the video tape recording of counseling interviews and the use of these tapes in counseling practicum critique sessions. The focus is on an evaluation of environments. Compared are: (1) regular counseling cubicle equipped with one-way vision screen and concealed microphone; (2) simulated counseling cubicle erected in TV studio; (3) open studio interview setting in corner of TV studio. Noted that the anxiety of the couselors during taping was greater than that of the counselees. Critiques of the tapes were done in groups of five and ten.

Schueler, Herbert. Television: research and demonstration tool. *Theory Into Practice*, 1964, *3*, (Fall), 9-11.

Another source describing the Hunter College program of teacher education and research on student-teaching evaluation. (See, also Schueler, H. and Gold, M. J., 1964).

Schueler, H. & Gold, M. J. Video recordings of student teachers - a report of the Hunter College research project. *The Journal of Teacher Education*, 1964, *15*, 358-364.

One of a series of research projects, this report is concerned with the use of kinescopes in teacher education. Three supervisory methods were evaluated: observation of the student teacher via personal visitation; supervision via the use of kinescope recordings alone; and supervision via a combination of in-person visitation and kinescope recordings. Classroom performance was measured by a modification of the OScAR (Observation Schedule and Rating) instrument previously developed by Medley and Mitzel. The evaluation failed to demonstrate significant differences between the supervisory methods. However, subjective reaction to the use of the new medium in enabling student teachers to view themselves in action was generally favorable. The authors also report optimism regarding the value of the use of the observation schedule.

Smith, Hope M. & Clifton, Marguerite A. *The viewing of oneself performing selected motor skills in motion pictures and its effect upon the expressed concept of self in movement.* USOE Grant No. 704105, Title VII, Project No. 486, University Microfilms Publication No. 63-2863. Los Angeles: University of California, August, 1961, 20 (mimeographed).

The problem was to determine if one's concept of his skill changes after viewing films of himself. Each of 75 college students between 17 and 21 performed five motor skills and filled out a self-perception checklist. After four weeks each saw unedited film loops of his previous performances, then filled out the self-perception checklist again. Control groups repeated their performances the second time and did not see films. Changes were found in self-perceptions relative to some of the skills by those viewing their individual performance but not by those viewing their performance as one of a member of a group.

Tintera, J. B. *Analysis of methods in which application of new communications media may improve teacher preparation in language, science and mathematics.* USOE Title VII, Project No. 008E, University Microfilms Publication No. 64-4837. Detroit: Wayne State University, n.d., 108.

Compared the effectiveness of three teaching critique methods on both immediate and long term teaching performance: conventional supervisor observation and conference; supervisor observation and conference supplemented by voice tape recordings made in the classroom; and supervisor observation and conference supplemented by kinescope films of student-teaching performance. Basically negative results reported, but there is some suggestion that after six months of actual teaching experiences, teachers prepared by video tape and voice tape recordings show superior performance when compared to those student teachers who receive only the conventional critique.

Walz, G. R. & Johnston, J. A. Counselors look at themselves on video tape. *Journal of Counseling Psychology*, 1963, *10*, (3), 232-236.

This exploratory investigation was concerned primarily with counselor changes in self perception as a result of video tape viewing of their interviews. A measure of self perception, an Interview Checklist, was filled out by 30 NDEA counselor candidates after an interview and again after viewing the interview on video tape. Evidence suggested that the experience gave counselors greater confidence in their interviewing and greater awareness of personal qualities in addition to increasing their desire for self study. While the counselors became less positive in description of themselves, this evaluation was more in line with their supervisor's rating. Personality variables as measured by the Bills Inventory of Adjustment and Values, and Welch's Anxiety Index were found to be somewhat related to direction and amount of change as a result of video viewing.

Ward, Glen R. Educating counselors by video tapes using the interpersonal process recall technique. *Dissertation Abstracts*, 1966, *27*, (4-A), 972-973.

Studied the effect of educating counselors by means of video tapes using the Interpersonal Process Recall (IPR) technique and by means of a more conventional method. Three treatment groups were established for practicum supervision: a video IPR treatment; an audio IPR treatment; and a control treatment. The video IPR group witnessed the playback of their counseling sessions of video tapes, while the audio group heard the audio recording of their counseling sessions. In addition, each counselor listened to an audio tape of the interview between his recall interviewer (IPR supervisor) and his client in which those two had reviewed the original video or audio taped counseling session. The third treatment group received no stimulated recall sessions, but listened to the audio tapes of their counseling interviews as is the conventional method for supervising practicum students.

No significant differences were found among the three treatment groups as evaluated by six judges using the Counseling Process Effectiveness Scale. This finding was discussed in relation to several problems in the design of the study.

Watkins, David L. Pictures as an aid in correcting baseball batting faults. Research Quarterly of the American Association for Health, Physical Education, and Recreation, 1963, 34, (May), 228-233.

The purpose of the investigation was to determine whether baseball players who viewed pictures of their batting technique would reduce their batting faults. Two groups of varsity baseball players were filmed during five weeks of batting practice. The experimental group viewed films collectively and then individually with the instructor who discussed faults. The experimental group significantly reduced faults compared to a control group that did not have the experience of self-viewing.

Application

Micro-Teaching

Allen, Dwight W. A new design for teacher education: the Teacher Intern Program at Stanford University. The Journal of Teacher Education, 1966, 17, (Fall), 296-300.

Reviews Stanford's graduate program of teacher education. As one of the eight distinctive features, describes micro-teaching which utilizes video tape recording and allows the student teacher to critique his own performance. Notes that Stanford was the first university to incorporate the use of the portable video tape recorder into a program of teacher education.

Allen, Dwight W. & Clark, Richard J. Microteaching: its rationale. The High School Journal, 1967, 51, (2, November), 75-79.

To clarify just what microteaching is, and to provide an analysis of the theoretical and practical reasons behind both its original and subsequent applications. Notes that video taping has been valuable supplement because it provides a vivid and objective record for the teacher or the researcher who wants to analyze what has happened in a microlesson.

Allen, Dwight W. & Fortune, J. C. An analysis of micro-teaching. Stanford, California: Stanford University Press, 1965.

Allen, Dwight W. & Gross, Richard E. Microteaching. National Education Association Journal, 1965, 55, (December), 25-26.
Describes a microteaching experience developed for neophyte teachers by the School of Education at Stanford University. Microteaching clinic consists of three phases: (a) a tutoring program where an intern candidate plans a specific program and works with one student twice a week; (b) individual microlessons for three weeks when the candidate teaches five or ten minutes on a single concept; and (c) microclasses where teams of three or four plan a unit of work for four or five students, with criticism of each other's teaching. Half of the lessons are recorded on videotape for the candidate's self-evaluation. Seen as a possible method for predicting success in classrooms and for researching teaching methods and gathering data on technical skills of teaching.

Aubertine, Horace E. The use of micro-teaching in training supervising teachers. The High School Journal, 1967, 51, (2, November), 99-106.
In the belief that teachers in the field can and should contribute to teacher education, and that the need for a more scientific approach to the training of supervisors is overdue, five professors of secondary education at Arizona State University developed a twelve month program for instructing teachers to act as supervisors. This is a report of the plans proposed. Micro-teaching was seen as a valuable tool. Noted that video tape use was not essential but helpful in providing accurate feedback.

Cook, F. S. & Brown, D. P. Does micro-teaching have a place in business education? Business Education World, 1968, 48, (April), 7-9+.
Detailed exposition of the micro-teaching method and discussion of its application to business education. Includes a list of disadvantages as well as advantages of the technique. This article is part of a two part series. The second part is to be concerned with a case description of micro-teaching and the subsequent follow-up of interns through video taping of their classroom presentations during their practice-teaching experiences.

The author emphasizes that micro-teaching is possible without a video tape recorder although the use of the recorder provides an excellent source of feedback not otherwise available.

Cooper, James M. & Stroud, Thomas. *The Stanford micro-teaching clinic.* Stanford, California: Stanford University, School of Education, 1966, 21 (mimeographed).

Demonstrated utilizations of videotape recording in teacher training programs. Replaying of the recorded micro-teaching experience was found to be most efficient when during the follow-up, the supervisor points out one or two specific behaviors warranting comment.

Cooper, James M. Developing specific teaching skills through microteaching. *The High School Journal*, 1967, *51*, (2, November), 80-85.

The author stated that breaking down the complex teaching act into simpler, more easily trainable skills offers much promise for teacher education. He found that micro-teaching provides a useful and constructive setting for the development of such specific teaching skills. Notes that the use of video-taping is not an essential part of micro-teaching, but it is certainly a most beneficial addition. Two major uses for video-tape were seen: (1) to show model teachers demonstrating specific skills, and (2) opportunity for student teacher to compare his own performance to that of model.

Fortune, Jim C. Toward a research strategy to investigate attributes of teacher behaviors. *The High School Journal*, 1967, *51*, (2, November), 93-98.

Discusses the use of micro-teaching to investigate teacher behaviors. Notes that this technique produces an environment that for the researcher falls somewhere in between the laboratory and the field environment. Notes that this link is essential if student behavior changes are to be used as criterion of teaching success.

Foster, F. G. Micro-teaching. *Arizona Teacher*, 1967, *55*, (May), 12-13.

Reports on the uses of videotape recording in teacher education. Notes the development of micro-teaching and cites five broad advantages for its use in the teacher training process. Northern Arizona University is working with universities in five other states experimenting on the usefulness of video-taping equipment as a part of the Rocky Mountain Educational Laboratory, Inc. This laboratory is one of 20 established by the federal government to assist states in putting basic research findings into practice.

Johnson, William D. Microteaching: a medium in which to study teaching. *The High School Journal*, 1967, *51*, (2, November), 86-92.

Recent efforts to improve American schools have tended to emphasize increased stress on curricular changes and organizational innovations. New stress on the quality and nature of instruction is seen as a necessary third ingredient in a general program of school improvement. Microteaching has proven useful for the improvement of instruction in two ways: (1) as an environment where teachers may gain skill under a program of guided practice and (2) as an environment where methods on teaching technique may be systematically investigated and improved.

MacMahan, Horace Jr. TV microteaching: panacea or gewgaw? *NAEB Journal*, 1967, *26*, (3, May-June), 71-76.

TV microteaching is *not* merely gewgaw; that is the conclusion of this author. He supports this by a comparison of the new method with the traditional teacher trainee experience of taking over an education methods class once during the semester or quarter.

The contribution of TV feedback information to the improvement and transferability of teaching skills is considered to be the strongest argument for its use. The one pitfall that is pointed out is the possible defensive response of the student not properly prepared for seeing himself as others see him.

Mayhugh, S. L. Micro-teaching: a major component of the pre-service program. *Contemporary Education*, 1968, *39*, (March), 206-209.

Discusses micro-teaching use in the 1966 pre-service program for Teacher Corps Interns at Indiana State University. Relates micro aspects of teaching to two teacher assessment instruments developed at ISU.

Meier, John H. *Microteaching -- an innovation in student teaching*. Address to the Annual Convention of the Colorado Education Association. Denver, Colorado, October 27, 1966.

Discusses the use of videotape recordings of actual teaching as an aid in hiring personnel. Notes that one could screen applicants better on the basis of an objective appraisal of performance. Remarks that this particular application of TV microteaching, however, might be construed as a threat by some prospective teachers.

Meierhenry, W. C. New significance of learning theory. *Educational Screen AV Guide*, 1966, *45*, (January), 22-23.

States that a look ahead in education suggests much greater inter-relationships of theory and practices. Comments on a number of developments which are focusing upon the process through which the prospective teacher approaches learning and acquires an understanding of how to help others learn. Particularly notes micro-teaching as one of these developments.

Schaefer, Martin & Stromquist, Marian H. Microteaching at Eastern Illinois University. *Audiovisual Instruction*, 1967, *12*, (10, December), 1064-1065.

States that as one part in the prescribed program of laboratory experience prior to student teaching, students at the secondary level in the teacher education program have had a chance to test their performance and growing competence before the camera and to view the results as recorded on video tape.

Sedgwick, L. K. & Misfeldt, H. T. Micro-teaching: new tool for a new program. *Industrial Arts and Vocational Education*, 1967, *56*, (June), 34-35.

Describes use of the micro-teaching technique in the American Industry Project. Discusses six advantages of this approach in addition to the obvious one of obtaining substantial practice and self-confidence prior to student teaching.

General

Altenhein, M. R. & Maybury, M. W. Third graders look at themselves through recorded TV. *Audiovisual Instruction*, 1963, *8*, 732-733.
Children in the Hunter College campus school for the intellectually gifted were given an opportunity to see themselves on video playback immediately after a telecast of a closed-circuit television lesson used in the teacher education program. This article describes the children's reactions in a guided discussion centering around improvement in oral communication skills. The children responded orally and by written questionnaire to the questions: Did we listen attentively? Could we be heard by everyone? Did we wait our turn to speak? Did we keep to the topic? How did we show we liked the poem? (Wordsworth's Daffodils) The author expressed enthusiasm for the value of the self-appraisal exercise made possible by the video playback.

Becker, Samuel L., Bowers John Waite, & Gronbeck, Bruce E. Videotape in teaching discussion. *The Speech Teacher*, 1968, *17*, (2, March), 104-106.
Describes the use of videotape in developing sensitivity in students to self and other participants in discussion settings.

Broadwell, Martin M. Are you ready for CCTV? *Training in Business and Industry*, 1966, *3*, (2, February), 20-22.
Reviews the use of CCTV in several industrial firms. Notes the experience of the pharmaceutical firm of Smith, Kline and French in Philadelphia training professional service representatives to sharpen skill in presentations to physicians and hospital officials. Remarks on the use of immediate playback of video tapes to allow trainees to see themselves as customers and audiences will see them. National Airlines is also reported to use TV equipment to allow employees to analyze their own performances. The author of this article remarks that these programs mentioned are representative of many similar programs throughout the country. He cautions that there are disadvantages to CCTV and expenses that should be considered before installing equipment.

Broadwell, Martin M. How to get started in CCTV. *Training in Business and Industry*, 1966, *3*, (5, May), 33-35+.
In a discussion of uses of CCTV mentions the simulated sales office and suggests the added feature of a video-tape recorder so that trainee can see and criticize his own actions.

Caton, Chester F. & Feather, George K. Teaching speech with television. *NAEB Journal*, 1965, *24*, (November-December), 26.
Describes the Air Force Academy use of video-taping in teaching speech. In response to a questionnaire, the cadets indicated that they found that critiques were more meaningful when accompanied by the playback of the video-tape.

Coaching with a TV tape recorder. Scholastic Coach, 1964, 33, (January), 56-58.
Describes the use of closed circuit television at Cupertine, (California) High School. Among these uses is replay of sports practice sessions to allow players and coach to get together and view and critique their performance.

Coaching with Videotape. Scholastic Coach, 1966, 35, (January), 36+.
Reports the use of videotape in football coaching at Hall High School in West Hartford, Connecticut. During play, the camera records the action; playback allows the coach and players to critique the game immediately.

Cunningham, C. J. Videotape; a teacher education tool for adult educators. Adult Leadership, 1967, 15, (March), 332.
Discusses the use of videotape equipment for in-service education programs for informal adult educators. Describes self-evaluation playback as one of two functions of recording during Ohio Cooperative Extension Service workshop.

Curl, David H. AV training. Training in Business and Industry, 1967, 4, (9, September), 14-16.
Reviews the presentation at the 1967 DAVI Industrial Training Session on "Video Tape in Training" by Elmer Clegg, manager, Education Research, Honeywell EDP Division, Wellesley Hills, Massachusetts. Clegg remarked that sales training has made more use of videotape than any other area. In this training a simulated sales call is made and taped, and critiqued by a class of trainees on playback. Clegg noted that no serious problems of embarrassment on seeing oneself in action were reported from this procedure.

Desoto, Inc. On the air -- VTR in sales training. Training in Business and Industry, 1967, 4, (7, July), 39,42,44.
Describes Project Empathy, "which combines proven clinical psychology techniques with video tape playback and group critique" of what Dr. Siegel, consulting clinical psychologist, for DeSoto's Paint and Resin Division, calls "interaction studies". What the project does is video tape sessions in which salesmen enact their roles with another serving as a customer. These tapes are then played back in groups and the performance discussed. Dr. Siegel cautions that programs of this type must be handled carefully in order to avoid defensive reactions by persons who lack the objective view of themselves that video provides.

Diamond, R. M. Television in business education. National Business Education Yearbook, 1965, 3, 67-73.
Primarily concerned with instructional television, this article reports one instance of the use of TV as feedback. At the University of Miami the self-contained single room camera was used in such a way that students using a typewriter were able to see for the first time their technique, and poor stroking was immediately corrected.

Diedrich, W. M. Use of video tape in teaching clinical skills. Volta Review, 1966, 68, (November), 644-647.
A review of the use of video tape this article also discusses problems which may arise when one sees himself in the playback of a recording.

Erickson, G. V. Use of videotape in education. Montana Education, 1967, 44, (September), 20-21.
Reports that Montana State University, in conjunction with the Rocky Mountain Educational Laboratory in Denver, Colorado, has been experimenting with the use of video tape in teacher education. Video tapes have been made of presentations by student teachers in methods classes and in a limited number of cases in actual teaching situations in public schools. Comments particularly on the value of viewing oneself.

Face-to-face communication. Training in Business and Industry, 1966, 3, (1, January), 38-40.
Discusses General Motor Institute's application of immediate television playback initiated in the fall of 1964. States that since then, GMI's speech students, GM executives, and car and truck dealers have used magnetic-tape TV recordings to criticize, evaluate and be tutored in their own public speaking. Students speak before the camera then watch and listen as their own critical audience.

Gross, R. E. & McCormac, R. C. Videotapes in the preparation of social studies teachers. Educational Screen AV Guide, 1967, 46, (September), 30-31.
Reviews use of videotape for self-evaluation by student teachers as one application of audiovisual aids.

Gustafson, Kent L. Portable VTR's for student teachers. Audiovisual Instruction, 1967, 12, (10, December), 1070-1071.
Since June 1966 the student teaching program at Michigan State University has been experimenting with a variety of portable video tape recorders and accessories for recording and playback to student teachers. The experiment was conducted to determine whether the current state of technological development of video tape recorders would permit use of such equipment in a large, widely diversified student teaching program. The general conclusion was that this type of video recorder can be used.

Ingham, George E. Teacher preparation through multimedia facilities. Audiovisual Instruction, 1967, 12, (10, December), 1054-1056.
An article on the use of a new multimedia complex installed at the University of Bridgeport, College of Education. Reports the weekly videotaping of some elementary education students during their classroom presentations in basic content. Videotapes were studied by the individual student teacher for self-analysis of performance and by student and supervisor for cooperative critique purposes. Reported overwhelmingly favorable reactions by students for technique.

Kagan, N., Krathwohl, D. R., & Miller, R. Stimulated recall in therapy using video tape -- a case study. Journal of Counseling Psychology, 1963, 10, 237-243.

A new technique in stimulated recall methodology. Interpersonal Process Recall (IPR), is described. It provides participants in a recently concluded diadic encounter with maximum cues for reliving the experience by means of video-tape playback. The participants view the playback in separate rooms and are encouraged by interrogators at significant points in the playback to recall feelings and interpret behavior. Parallel reactions are obtained from the participants through simultaneous interruption of the video-tape playback. IPR protocols suggest several potential uses of the technique: (a) validation of theory; (b) gaining new insights about the nature of various supervisory relationships; (c) examination of group processes; (d) education of counselors; (e) acceleration of psychotherapy. One of these uses, the acceleration of psychotherapy, is illustrated by means of a case study.

Kanner, Joseph H. Army television research activities. AV Communication Review, 1960, 8, (1), 74.

A very brief note on television studies conducted by the U. S. Army Signal Corps dating back to 1951. Mentions the procurement of video tape recorders to be used in a study planned for the Signal Schools, Fort Monmouth, and Fort Gordon to evaluate the training of new instructors. "It is believed that the immediate playback feature of video tape provides an opportunity for insight into error and deficiencies by new instructors not possible with other existing methods."

Landsman, T. & Lane, D. AV media, yes; depersonalization, no. Audiovisual Instruction, 1963, 8, 24-28.

Reports on the uses of video-tape at the University of Florida. Describes one major use in a practicum class in counseling wherein student role playing performances are recorded and played back on a classroom monitor. This gives students an opportunity to play both counselor and counselee and to see themselves in these roles. Encouraging results in increasing counselor perceptivity are remarked.

Mars, Walter J. AACTE workshop in teacher education. Audiovisual Instruction, 1967, 12, (10, December), 1046-1048.

Under a grant from the United States Office of Education (NDEA Title VII-B) the American Association of Colleges for Teacher Education has designed a Workshop in Teacher Education. The purpose of this workshop is to offer teacher educators enough of an understanding and knowledge of new teaching strategies and media systems in teacher education to enable them to make intelligent decisions concerning implementation of the content in their own teacher preparation programs. (This present AACTE Media Project is the outgrowth of an earlier association effort - TEAM). This article discusses four components that the workshop considered for inclusion in a teacher education program: (1) Interaction Analysis; (2) Nonverbal Behavior in the Classroom; (3) Microteaching, and (4) Simulation.

Moffett, Thomas J. & Fackrell, Jerry. Challenge and a reply. *NAEB Journal*, 1967, *26*, (1, January-February), 90-93.
This is a report of the use of closed circuit television at the University of Florida, College of Education. In addition to classroom observation, the CCTV system has served as a device in role playing experiences for the training of teachers and counselors. An experimental project at the college uses video tape recordings of students in discussion groups relating their internship experiences. Tapes are then played back so they can evaluate their own roles and identify and clarify professional goals.

Nelson, Harold E. Videotaping the speech course. *The Speech Teacher*, 1968, *17*, (2, March), 101-103.
Reviews several programs utilizing videotape in teaching fundamentals of speech. Relates student reactions to the value of viewing own performance. System is set up so that instructors may use videotaping facilities on a voluntary basis. Both fixed studio and portable cameras and recording equipment are available as well as trained personnel to man the equipment.

Ochs, Donovan J. Videotape in teaching advanced public speaking. *The Speech Teacher*, 1968, *17*, (2, March), 110-112.
Report of a project carried out at the University of California - Davis in which student speeches were videotaped and each student prepared written self analyses of his performance.

Owens, L. D. & Dunne, D. M. Video tape; teacher in-service programs. *The Instructor*, 1968, *77*, (March), 140-141.
Describes "Mobilab" - a videotape system that records actual classroom situations and instantly plays back the scene for a teacher's private showing or for use in a seminar with counselors and other teachers. Reports on its use over the past three years in in-service programs for teacher training in Lane County, Oregon school districts.

Palo Alto: videotape lets performers see how they act. *Nation's Schools*, 1966, *78*, (October), 90.
Very brief note on the use of videotape recording in grade school theoretical productions in the Palo Alto, California Unified School District.

Reynolds, R. V. E. Videotape in teaching speech in a small college. *The Speech Teacher*, 1968, *17*, (2, March), 113-115.
Report of Loras College's project in which each student enrolled in a speech performance course delivered his speech before the video camera and then viewed his presentation. This was done at least twice a semester and sometimes weekly, in order that viewing oneself could be a natural integral part of speaking assignments.

Sauer, C. F. Upgrade instruction via video tape. School Shop, 1967, 27, (September), 48-49.
In preparing demonstrations for class, the author noted how effective the video tape was for teachers who viewed themselves. It was reported that weaknesses in the presentation could be observed to account for what might have been thought to be student's slow comprehension.

Thompson, W. M. & Yoder, R. E. Salesmanship can be enriched by closed-circuit TV. Journal of Business Education, 1967, 43, (October), 16-19.
Through the medium of TV, the salesmanship student at Sacramento State College sees himself as a personality compared to others, how persuasive methods apply in various circumstances, and how individuals react to things they like or do not like. Among other advantages of using TV, the author reports that standardized tests show that students learn more when TV is used in teaching salesmanship.

Thoresen, C. E. Video in the college classroom: an exploratory study. Personnel and Guidance Journal, 1966, 45, (October), 144-149.
The effect of a counselor working directly with college teachers as a specific student learning problem - oral nonparticipation in discussion classes - was explored. Seven college history instructors viewed with a counselor video-taped excerpts of their own classroom discussion sessions. During playback sessions the counselor modeled and verbally and nonverbally, reinforced certain instructor behaviors seen on video. Results: (1) instructors reported video-playback counseling was, very helpful in changing their behavior in the classroom; (2) instructors became more aware of how verbal and nonverbal cues influence student behaviors; (3) small group playbacks seemed as effective as individual playback procedure.

Tucker, C. A. Video recordings implement teaching. Industrial Arts and Vocational Education, 1961, 56, (June), 37.
Relates the experience with video tape recorders in teacher education at State University College, Oswego, New York. Each student is provided with an audio record of each class and lab teaching experience. He is also critiqued by the instructor and several of the participating students. By studying the critique sheets and then listening to the tape recording, the student sees himself as others see him when he is teaching.

TV focuses on the hospital room. Training in Business and Industry, 1966, 3, (7, July), 33-35.
Describes use of closed-circuit television to teach nurses at Montefiore Hospital in the Bronx, New York. In addition to the conventional teaching by television, the hospital recently added TV tape recordings to its CCTV system. This allows the instructor to record brief segments of students performing duties such as feeding, bathing

taking blood pressure, etc. Immediately upon the close of the practice nursing session, the entire class reviews the tape with critical analyses offered by the instructor.

Weber, C. Student actors see own performances. Educational Screen AV Guide, 1967, 46, (January), 28-29.
Very brief notes on the use of videotape in Palo Alto Unified School District. Fifth and sixth graders view their own performances of class plays and receive immediate critique by adult director.

Interaction Analysis

Amidon, Edmund J. Using interaction analysis at Temple University. Paper read at the National Association for Student Teaching meeting, Rochester, New York, 1966.

Report of a study in progress. See Soar (1968) for published review describing this work.

Amidon, Edmund J. Interaction analysis applied to teaching. *National Association of Secondary School Principals Bulletin*, 1966, *50*, (December), 93-97.

A brief overview of the research on interaction analysis using the Flander's system. States four conclusions drawn from the research: (1) apparently there are certain identifiable teacher behaviors that inhibit and others that enhance pupil learning. Accepting pupil ideas, for example, seems to be consistently related to increased pupil achievement, while excessive criticism is related to low pupil achievement; (2) patterns of teaching can be described objectively and then related to pupil outcomes. These may be particular patterns that are appropriate for teaching certain subject matters; (3) there appears to be certain behaviors that characterize good teachers (in terms of pupil achievement) regardless of the subject matter being taught; and (4) training in Interaction Analysis, and possibly some other observational devices, are the only methods in teacher education which we know actually do produce appropriate changes in the teaching behavior of student teachers during their student teaching experience.

Amidon, Edmund J. and others. Group supervision; a technique for improving teaching behavior. *The National Elementary Principal*, 1966, *45*, (April), 54-58.

Proposes that the act of teaching be the focus of teacher supervision. Hypothesizes that this focus would allow group supervision rather than individual principal-teacher supervision, to be effective. Reviews the use of Flanders interaction analysis which might apply to group supervision.

Amidon, Edmund J., & Hough, John B. *Interaction analysis: Theory, research and application*. Reading, Massachusetts: Addison-Wesley, 1967, 402.

Contains selected readings about early and current efforts to code verbal statements during spontaneous classroom communication and to compare the frequencies of different kinds of coded statements to other measures of the classroom situation. This collection of papers is intended to serve as a useful reference for those interested in some primitive theories about teacher influence in the classroom which are based on interaction analysis.

The authors note that in selecting papers to be included in this book they chose only papers which dealt with the system of interaction analysis. It does not, therefore, attempt a broad general survey of the many systems currently available for the analysis of classroom verbal behavior.

Under each of the three major headings of theory, research, and application, papers that were representative of the work done to date in these areas were chosen.

Contents include: (1) background and theory; (2) interaction analysis; procedures and research on teaching patterns; and (3) the application of interaction analysis to problems of teacher education. (183 references; 12 of which are reprinted in this book).

Amidon, Edmund J., & Hunter, Elizabeth. Implication of interaction analysis research for the education of secondary school teachers. *The High School Journal*, 1967, *51*, (1, October), 3-6.

States that only the teacher himself can improve his teaching behavior. Discusses interaction analysis as one procedure from existing research that can be utilized.

Amidon, Edmund J., & Kirk, Jeffery. When student teachers study interaction. *The Elementary School Journal*, 1967, *68*, (November), 97-104.

Amidon, Edmund J., & Simon, Anita. Teacher-pupil interaction. *Review of Educational Research*, 1965, *35*, (April), 130-139.

The studies reviewed utilized observational data to measure the overt behavior of pupils and teachers as they interact. Presents a brief description of some systems currently used to collect and categorize observational data involving teacher-pupil interaction and summarizes research related to the following areas: teaching patterns; achievement; climate, perception and personality; and teacher education. Conclusions drawn were: (1) that within school classrooms there appeared to be definite patterns of teacher-pupil interaction which could be objectively observed and categorized. These patterns were apparently related to achievement, perception, and classroom climate; (2) while there appeared to be a relationship between teacher personality and teacher-pupil interaction patterns, there seemed to be uncertainties about the exact nature of this relationship; and (3) the application of teacher-pupil interaction research in teacher education programs appears to hold great promise for the improvement of education. The feedback provided by these observational systems seems to have significant influence on the behavior and attitudes of teachers.

Bales, R. F. *Interaction process analysis*. Cambridge: Addison-Wesley, 1950, 203.

Bany, Mary A., & Johnson, Lois V. *Classroom group behavior*. New York: Macmillan, 1964, 412.

An attempt to define operationally the contributions of group research to education. To make an application of what is known concerning the psychology of groups, actual incidents of classroom group behavior are reported. These descriptions of specific classroom group situations are then analyzed according to what has been discovered concerning groups.

Barr, A. S. The measurement and prediction of teaching efficiency: A summary of investigations. *Journal of Experimental Education*, 1948, *16*, (4, June), 203-283.

An early review of research with the purposes of: (1) ascertaining what is known about the measurement and prediction of teaching efficiency, the competencies, qualities and behavior controls essential to success in teaching; (2) to appraise current practice as it relates to the identification of the prerequisites to teaching success, and more particularly as it relates to the validity and reliability of the instruments commonly employed in the evaluation and prediction of teaching efficiency; and (3) to estimate current and past success in predicting teaching efficiency when predictions are made at different points in the training program, for different purposes, and by persons with varying philosophies of measurement and education. (135 references)

Barr, A. S. *Teacher effectiveness: A summary of investigations*. Madison, Wisconsin: Dembar Publication, 1961.

An extension of Barr's earlier work (1948) bringing the research findings up to date.

Bellack, Arno A. (Ed.) *Theory and research in teaching*. New York: Bureau of Publications, Teachers College, Columbia University, 1963.

Notes a prominent feature of contemporary (1963) research is emphasis on systematic observation of the classroom activities of students and teachers. Provides a collection of papers by researchers engaged in studies of classroom behavior which were prepared for 1962 conferences of the department of Curriculum and Teaching of Teachers College, Columbia University. Contributions are by B. Othanel Smith, Milton Meux, Marie M. Hughes, Ned A. Flanders, Mary Jane McCue Aschner, Donald M. Medley and Harold E. Mitzel, Edna Shapiro, Martin Kohn and Eleanor Leacock.

Biddle, Bruce J. Methods and concepts in classroom research. *Review of Educational Research*, 1967, *37*, (3, June), 337-357.

Deals with five specific problems of classroom research as they are handled in recent programs of investigation: coverage, methods of data collection, unit of analysis, conceptual posture, and concepts used. The authors state that "The reader is cautioned that this brief treatment must of necessity do some violence to the studies cited; for instance, no summary of findings is attempted." (45 references).

Biddle, Bruce J., & Adams, Raymond S. *The analysis of classroom activities*. U. S. Office of Education, Title VII Final Report, Project No. 5-0892. Columbia: University of Missouri, in press.

Referred to by Biddle, 1967, as a detailed review of empirical studies of classroom interaction.

Biddle, Bruce J., & Adams, Raymond S. Teacher behavior in the classroom context. In Laurence Siegel (Ed.), *Contemporary theories of instruction*. San Francisco: Chandler Publishing Co., in press.

Referred to by Biddle, 1967, as a detailed review of empirical studies of classroom interaction.

Biddle, Bruce J., & Ellena, William J. (Eds.) Comtemporary research on teacher effectiveness. New York: Holt, Rinehart & Winston, 1964, 342.

Concerns research on the effectiveness of teachers. Designed to stimulate interest in problems of teacher excellence through presenting new insights developed from recent research. Seven examples are advanced of contemporary thinking on problems faced by teachers in classrooms plus historical and integrative materials necessary to explore the effectiveness problem in broad context. Flanders system of interaction analysis is included in Chapter 7 as one example of a problem to be considered relative to teacher effectiveness.

Biddle, Bruce J., Fraser, Graeme S., & Jellison, Jerald M. Teacher role: Conceptions and behavior. In Biddle, Bruce J., and others (Eds.), Essays on the social systems of education. U. S. Office of Education, Title VII Final Report, Project No. 5-0892. Columbia: University of Missouri, 1965, 238-369.

Referred to by Biddle, 1967, as an earlier review of empirical studies of classroom interaction.

Bjerstedt, A. Interaction-oriented approaches to the assessment of student teachers. Journal of Teacher Education, 1967, 18, (Fall), 339-357.

A theoretical discussion of interaction-oriented approaches in research on teacher effectiveness. A series of data collection methods potentially useful in such approaches is described. The methodological illustrations focus upon interaction preferences, social awareness, freedom from socio-emotional barriers, availability and adequacy of social responses, and receiver-adapted language. (22 references).

Borg, W. R. Teacher effectiveness in team teaching. Journal of Experimental Education, 1967, 35, (Spring), 65-70.

The problem of this study was to explore the interactions between the members of teaching teams and collect preliminary data on the characteristics of more and less successful teams and team members. Among other procedures, the Bales system of Interaction Process Analysis was used to classify verbal behavior taken from tape recordings of teacher planning sessions. From this phase the investigators concluded that effective teachers participate more in planning sessions and contribute a significantly greater number of task-oriented remarks than less effective teachers.

Borgatta, Edgar F. A new systematic interaction observation system: Behavior scores system (BSs System). Journal of Psychological Studies, 1963, 14, (March), 24-44.

Boyd, R. D. Phase analysis of groups of elementary school pupils. Journal of Experimental Education, 1967, 35, (Spring), 91-95.

Describes the Bales and Strodtbeck "phase hypothesis", i.e., the proposition that under certain conditions groups tend to move in their interaction from a relative emphasis upon problems of orientation, to problems of evaluation, and subsequently to problems of control, and that concurrent with these transitions the relative frequencies of both negative reactions and positive reactions tend to increase.

Presents an application of the phase hypothesis to groups of elementary school children. The phase hypothesis was not sustained when all sessions of the experiment were summed by type of act and phase. The author suggests explanations for this result and concludes that phase analysis of children's groups is possible and may yield valuable insights and understandings of their structures and processes.

Boyd, R. D., & DeVault, M. V. The observation and recording of behavior. Review of Educational Research, 1966, 36, (5, December), 529-551.
Deals with selected theoretical and empirical work in the areas of observational techniques and the collecting and recording of observational data. Although the review concentrates on the literature of the past six years (1960-1966), some other studies and systems have been included for better perspective. Includes "Classification of Representative Observation Systems" in chart form (Fig. 1, p. 533). The schema has two dimensions: (a) one dimension classifies systems designed for specific situations: classroom, small group, child study, interpersonal; (b) another dimension classifies the type of observational data as social-emotional, cognitive and problem solving, and individual overt behavior. (99 references).

Brown, Bob B., Mendenhall, William & Beaver, Robert. The reliability of observations of teacher's classroom behavior. Journal of Experimental Education, 1968, 36, (3, Spring), 1-10.
The Teacher Practices Observation Record (TPOR) is an instrument for measuring classroom behavior by systematic observation. It attempts to measure the agreement-disagreement of teachers' observed classroom behavior with educational practices advocated by John Dewey in his philosophy of experimentalism. In addition to presenting this instrument and briefly describing its development, the authors report the reliability data obtained by using it in a study of observations of filmed teaching episodes. The data reported on the TPOR is placed in the context of the general problem of studying reliability, and is used to demonstrate a new design for estimating the reliability of such observational measurements.

Castetter, D. D., Standlee, L. S., & Fattu, N. A. Teacher effectiveness: An annotated bibliography. Bulletin of the institute of Educational Research, School of Education, Vol. 1., no. 1. Bloomington, Indiana: Indiana University Press, 1954.

Crispin, D. Discipline behaviors of different teachers. Contemporary Education, 1968, 39, (1, January), 164-167.
Uses the "Crispin System of Interaction Analysis" to gather evidence relevant to the question "Do teachers cause their own discipline problems in the classroom?" The system used categories of oral behavior recorded every three seconds; discipline was one of the categories and was defined as those statements that represented an attempt of the teacher to require the student to discontinue inappropriate behavior. The author concluded that his data indicated that the

discipline behavior of a teacher is a function of himself -- his own personality. He discusses other relevant factors that offer implications for further research.

Cunningham, J. D. Interaction analysis: a useful technique for research and science supervision. Science Education, 1967, 51, (1, February), 27-32.
Describes Flanders and Amidon's systems of interaction analysis. Notes five main differences between the systems. Provides a case study using the Amidon system. Includes information for those interested in further study of interaction analysis such as access to training films and tapes, etc.

Domas, S. J. & Tiedeman, D. V. Teacher competence: an annotated bibliography. Journal of Experimental Education, 1950, 19, 101-218.
A 1006 item bibliography; 672 annotated entries.

Flanders, Ned A. Teacher influence, pupil attitudes, and achievement. U. S. Office of Education, Cooperative Research Project no. 397. Minneapolis: University of Minnesota, 1960, 121 (mimeographed).
One of the two most referenced publications describing the original Flanders System of Interaction Analysis. Flanders describes his theoretical model as one of two currently in use to understand interaction analysis data. One in use at the University of Ilinois by B. O. Smith was stated to make use of the logical steps of problem-solving and what we know about inductive and deductive reasoning, scientific method, procedures for defining terms, level of abstraction and principles from the field of semantics. In contrast, the Flanders model is said to be based less on the intellectual skills and more on a set of social skills used by teachers to control and manage class activities. It utilizes a psychology of superior-subordinate relationships, adapted to fit classroom conditions.

Flanders, Ned A. Using interaction analysis in the in-service training of teachers. Journal of Experimental Education, 1962, 30, (June), 313-316.
Teachers were given training in the use of interaction analysis and encouraged to form teams to discuss and observe fellow teachers during 1960-61 Inservice Training Project. Interpretations of data were given to teachers as feedback in presence of a trained observer-consultant. Changes in teachers' patterns of spontaneous verbal behaviors were analyzed on basis of observation and attitudinal scales obtained from teachers before participation plus attitudinal tests given three times to students of these teachers. Comparisons were made to nonparticipating control group.

The "early returns" of the analysis of the data indicate that the teachers who participated in the project made changes in their patterns of spontaneous verbal behavior that were statistically significant.

Flanders, Ned A. Teacher behavior and in-service programs. *Educational Leadership*, 1963, *21*, (1, October), 25-29.

Describes two in-service training projects which attempted to measure changes in teacher behavior as part of the program evaluation. One used the Medley and Mitzel OScAR instrument to help teachers achieve their own preferred degree of democratic classroom management. The second used Flanders System of Interaction Analysis with the purpose of increasing the flexibility of teacher influences and use of those behaviors which support pupil participation in the classroom learning activities. Both studies showed that changes can occur though not all teachers do modify their behavior.

Flanders, Ned A. *Helping teachers change their behavior*. U. S. Office of Education, Title VII, Project No. 033, University Microfilms Pub. No. 64-4911. Ann Arbor: School of Education, University of Michigan, April, 1963, 163.

To develop and evaluate an in-service training program designed to change spontaneous behavior of teachers and to produce five sound filmstrips which could be used as an audiovisual aid in such an in-service training program. Subjects were 63 junior high school teachers in Minnesota. The test measures were observer ratings of teachers using interaction analysis (classification of verbal communications), the Minnesota Teacher Attitude Inventory, the Cattell Sixteen Factor Personality Inventory, and the Runner Questionnaire.

Conclusions were: (1) teachers classified as more "indirect" on the interaction analysis and subjected to the indirect training method became more "indirect" in their teaching; (2) when subject to the direct method, they became less "indirect" in their teaching; (3) "direct" teachers made some (but insignificant progress) in becoming more "indirect".

Flanders, Ned A. *Interaction analysis in the classroom; a manual for observers*. (Rev. ed.) Ann Arbor: University of Michigan, 1964, 45.

Flanders, Ned A. Some relationships among teacher influence, pupil attitudes, and achievement. In Bruce J. Biddle and William J. Ellena. (Eds.), *Contemporary research on teacher effectiveness*. New York: Holt, Rinehart and Winston, 1964, 196-231.

Another source describing the original work of Flanders in Interaction Analysis. See also Flanders, 1960.

Flanders, Ned A. *Teacher influence, pupil attitudes, and achievement*. U. S. Office of Education cooperative research monograph, No. 12. Washington, D. C.: U. S. Government Printing Office, 1965, 126.

The second most frequently referenced source on Flanders original work in interaction analysis. See also Flanders 1960 and 1964.

Flanders, Ned A. Integrating theory and practice in teacher education. In forty-fourth yearbook of the Association for Student Teaching, theoretical bases for professional laboratory experiences in teacher education. Dubuque, Iowa: Association for Student Teaching, 1965, 71-92.

Reviews the development of the Flanders' System of Interaction Analysis and describes research in which it was used in pre-service teacher education programs with elementary and secondary student teachers. (13 references)

Furst, Norma & Amidon, Edmund. Teacher-pupil interaction patterns in the teaching of reading in the elementary school. *Reading Teacher*, 1965, *18*, (January), 283-7.

To determine the kinds of teacher-pupil interaction patterns present in elementary school classrooms. Specifically attempts to answer two questions: (1) What differences in interaction patterns, if any, exist among the six grade levels in the teaching of reading? (2) What differences in interaction patterns, if any, exist between the reading patterns and those of other subject areas? Flanders Interaction Analysis was used. The general conclusion was that teachers at different grade levels acted as though they held different assumptions about the teaching learning process. The authors discuss some major trends in the data.

Hare, A. Paul, Borgatta, Edgar F. & Bales, Robert F. (Eds.), *Small groups: studies in social interaction*. New York: Knopf, 1955, 666.

Included here, particularly for the 584 item annotated bibliography and accompanying index divided into five major parts: Review of literature, Theory, Methodological and statistical problems, Measurement techniques, and Variables.

Hare, A. Paul and others (Eds.), *Small groups: studies in social interaction*, (Rev. ed.) New York: Knopf, 1965, 706.

A revision of the 1955 edition, this volume brings a review of the research up-to-date. The section most relevant to the classroom situation is Part III. The group as a system of social interaction, pages 355 to 700. (References are provided with each chapter.)

Heyns, Roger W. & Lippitt, Ronald. *Systematic observational techniques*. In Gardner Lindzey. (Ed.), *Handbook of Social Psychology*. Cambridge, Massachusetts: Addison-Wesley, 1954, 370-404.

Provides a review of observational techniques including: a brief history of observer methods; occasions for the use of observers; the two basic observer systems: category sets and rating scales; illustrative observer systems: observation of face-to-face group interaction; observation in a two-person situation; observation of social behavior in a field setting; observation of social behavior in children. Describes illustrative equipment devices: devices for recording on-the-spot observations; devices for collecting data during social interaction; devices for preserving a record of the behavior. Outlines problems in the development of an observer system, including reliability, validity, sampling, pre- and post-categorization, and the effect of observers on the behavior itself. Concludes with a discussion of the ideal conditions: analogy to psychophysics. (42 references).

Honigman, F. *Synopsis of innovations and revisions to the Flanders system of interaction analysis*. Philadelphia, Pennsylania: Temple University, 1964.

Hunter, E. & Amidon E. Improving the language skills of deprived teachers. *Elementary English*, 1968, *45*, (January), 80-3.
A general discussion of the importance of talk in teaching. It is suggested that teachers avail themselves of the literature and instruments (specifically the tape recorder) that can help them to improve their language abilities in the classroom. Mentions Flanders Verbal Interaction Category System (VICS) as important aid to improvement.

Kleinman, Gladys S. Assessing teaching effectiveness: the state of the art. *Science Education*, 1966, *50*, (April), 234-238.
Reviews the methods of assessing teacher effectiveness by the identification of patterns of behavior using classroom observation. Discusses the research of such people as Horn (1914), Puckett (1928) and continuing down to Hughes (1959), Flanders (1960) and Ryans (1960). Summarizes research findings of Ellena in fourteen points. Concludes that measurement of behavior by observation appears to be the most promising technique to date for assessing teacher effectiveness.

Kliebard, Herbert M. The observation of classroom behavior. In Association for Supervision and Curriculum Development and the Center for the Study of Instruction, National Education Association, *The way teaching is*. Washington, D. C.: The Association, 1966, 45-76.
Reviews in some detail a selected list of studies concerned with the observation of classroom behavior. Includes a diversity of settings and procedures.

Kowatrakul, Surang. Some behaviors of elementary school children related to classroom activities and subject areas. *Journal of educational psychology*, 1959, *50*, (June), 121-28.
An investigation of the relationships between six behaviors manifested by fifty-six elementary school children to three classroom activities and four subject areas. Findings demonstrated that significant relationships exist between classroom activities, subject areas and behaviors manifested by students. The least amount of teacher-disapproved behavior was evident during the study of arithmetic.

Lambert, P. and others. Notes on the use of Flanders interaction analysis. *Journal of Educational Research*, 1965, *58*, (January), 222-4.

Describes Flanders model of interaction. Based on the use of the model in 72 classroom periods, suggests two modifications in the Flanders categories. (1) Suggests category seven, teacher criticizes or justifies authority, should be separated into mild criticism and strong criticism. (2) Notes that category ten, silence or confusion should be separated into two. States that observers found it necessary to establish certain "ground rules" for situations (class recitation, teacher writes on blackboard while student copies, etc.). Uniformity in using the model might be increased by classification of these ground rules within the system.

La Shier, W. S., Jr. & Westmeyer, P. Use of interaction analysis in BSCS laboratory block classrooms. *Journal of Teacher Education*, 1967, *18*, (Winter), 439-46.

MacDonald, J. B. Myths about instruction: the myth of interaction analysis. *Educational Leadership*, 1965, *22*, (May), 611+.

In the context of an examination of many different types of myths of classification, the author notes that some are misusing Flanders interaction analysis by interpreting findings as support for prescribing indirect teacher behavior. Notes that Flanders underscores the concept of the analysis as being *one* source of feedback, with the judgment of performances, or "oughtness", being left up to the teacher. Suggests that appreciation be given to the fact that any system of interaction analysis is a metaphor - a created reality - that the categories we use were put there and labeled by us, and are not necessarily "natural" phenomena.

McLeod, Richard J. Changes in the verbal interaction patterns of secondary science student teachers who have had training in interaction analysis and the relationship of these changes to the verbal interaction of their cooperating teachers. *Dissertation Abstracts*, 1967, *28*, (1-A), 145-A.

Purposes of the study were (1) identify non-random changes in verbal patterns of student teachers of science trained in Flanders System of Interaction Analysis; (2) search for changes in student teacher patterns related to patterns of their cooperating teachers; (3) compare findings with control group not trained in Flanders technique.

Major findings were: (1) Most rapid period of change in verbal behavior occurs during first half of student teaching for those trained in interaction analysis, and during second half for those not so trained. (2) After the first half of student teaching both trained and untrained experience changes that decrease number of differences between them.

Additional conclusions: Student teachers trained in interaction analysis differ from control group as follows: (1) they experience *more* non-random changes in verbal patterns, (2) they experience *more* non-random changes toward indirect teacher influence and *fewer* toward *direct* teacher influences (3); they use *more* indirect and *less* direct teacher influences; (4) they are more likely to change verbal patterns in direction of becoming *more* like cooperating teachers.

Medley, Donald M. Experiences with the OScAR technique. *Journal of Teacher Education*, 1963, *14*, (1, March), 267-273.
Describes two main studies in which the OScAR (Observation Schedule and Record) has been used in the program of the Office of Research and Evaluation of the Division of Teacher Education. Discusses: (1) behavior relating to teacher effectiveness, (2) supervisory ratings as criteria of effectivenss, (3) the effect of the student-teaching experience, (4) factors affecting the outcomes of student teaching, and (5) the feasibility of measuring classroom behavior objectively.

Medley, D. M. & Mitzel, H. E. A technique for measuring classroom behavior. *Journal of Educational Psychology*, 1958, *49*, 86-92.
Describes the OScAR technique which was developed as a device for securing a record of behaviors of teacher and pupils observed by a classroom visitor. The three aspects in which the behavior observed in this study differed were: emotional climate, verbal emphasis, and social structure. It was concluded that (a) relatively untrained observers using an instrument like OScAR can develop reliable information about differences in classrooms of different teachers, (b) that OScAR technique is sensitive to only three of many dimensions that probably exist, and (c) that observations made with instruments of this type can contribute to the solution of many important problems having to do with the nature of effective teaching.

Medley, Donald M. & Mitzel, Harold E. Measuring classroom behavior by systematic observation. In N. L. Gage (Ed.), *Handbook of Research on Teaching*. Chicago: Rand McNally & Co., 1963, 247-328.
Notes the lack of observations of classroom behavior to date (1963). Reviews the role of direct observation in research on teaching and discusses in detail the methodological problems which must be faced and solved in order to learn about the teaching process and its relationship to pupil learning. (74 references).

Moskowitz, Gertrude. Toward human relations in supervision. *National Association of Secondary School Principals Bulletin*, 1966, *50*, (December), 98-114.
Refers to the Project on Student Teaching (POST) being conducted for five semesters by Professor Edmund Amidon of Temple University funded by a cooperative research grant. Study reported on here is correlative but not part of grant. Both concern the effects of training cooperating teachers in the Flanders System of Interaction Analysis. Main conclusions of this study are: (1) Training cooperating teachers in interaction analysis appeared to affect in a positive direction the

interpersonal relationships of the cooperating teachers and their student teachers. (2) Training both cooperating teachers and student teachers in interaction analysis appeared related to more positive interpersonal relationships between the cooperating teachers and their student teachers. (3) Training of only the student teachers appeared to affect the attitudes toward their cooperating teachers in a negative direction.

Moskowitz, Gertrude. The effects of training in interaction analysis on the behavior of secondary school teachers. *The High School Journal*, 1967, *51*, (1, October), 17-25.
Directed toward the practicing teacher, this paper gives a simple and useful summary of the work done by major researchers in interaction analysis. Includes what improvements have been found in teaching when instructors were trained in interaction analysis, how training brings about results and why it works. Primarily concerned with the Flanders system and its recent derivatives.

Moustakas, C. E., Sigel, I. E., & Schalock, H. D. An objective method for the study of adult-child interaction. *Child Development*, 1956, *27*, 109-134.
A schedule is presented for observation of adult-child interaction, with a total of 89 adult and 82 child categories, as well as anxiety-hostility ratings. The schedule has been tested and found reliable in studying parent-child interaction in home and laboratory (playroom) and in studying therapist-child interaction. Certain general trends, similarities, and differences in mother-child interaction in home and playroom and in therapist-child interaction in the playroom are noted. The general applicability, strengths, and weaknesses of the procedure are discussed.

Nelson, L. N. Teacher leadership: an empirical approach to analyzing teacher behavior in the classroom. *Journal of Teacher Education*, 1966, *17*, (Winter), 417-425.
Designed to study the model teaching style used by the elementary teacher under different instructional programs in language arts and the degree of flexibility which exists within a given leadership style. Flanders system of interaction analysis was used.

Ober, Richard L. The nature of interaction analysis. *The High School Journal*, 1967, *51*, (1, October), 7-16.
A recent and easy to understand overview of what is meant by interaction analysis and how it can be used. Directed toward the practicing teacher, it eliminates confusing detail in comparing systems available for use. Concentrates primarily on the Flanders system of interaction analysis.

Perkins, Hugh V. A procedure for assessing the classroom behavior of students and teachers. *American Educational Research Journal*, 1964, *1*, (November), 249-260.

Pfeiffer, I. L. Teaching ability grouped classes. Education, 1966, 87, (October), 88-93.

Examines the pros and cons of ability grouping. Uses Flanders Interaction Analysis to classify verbal interaction in classes of different ability levels taught by the same teacher. Found that teacher verbalization was not differentiated by these teachers in classes of different ability levels. States that when ability grouping is used, it should be accepted as a procedure preferred by teachers. The fundamental reason for the practice, i.e., to enable teachers to adjust their teaching to a group limited in variability, may not function in the classroom.

Pfeiffer, I. L. Teaching in ability grouped English classes: a study of verbal interaction and cognitive goals. Journal of Experimental Education, 1967, 36, (Fall), 33-8.

A fundamental assumption in most studies and in most schools where ability grouping is practiced, apparently, has been that when a teacher is assigned a class of a certain ability level his teaching style, goals, materials, and evaluation are accordingly adapted to the general ability of the class. This study challenges the assumption. The author investigated certain aspects of teacher behavior when teaching at two different ability levels. Teacher-pupil verbal interaction in the classroom and cognitive goals were analyzed. Flanders system of interaction analysis was utilized. It was found that teachers did not differentiate their patterns of teacher-pupil verbal interaction in classes of different levels of ability. Verbal interaction was significantly similar in classes of different ability levels taught by the same teacher.

Porter, R. M. Relationship of participation to satisfaction in small-group discussions. Journal of Educational Research, 1965, 59, (November), 128-32.

By the use of interaction process analysis, categorized the participation of thirty-five members in small-group discusssions in a Group Development Course at Temple University. These discussion groups averaged seven to ten persons each. Fifteen different categories were used, modeled largely after those used by Robert F. Bales. Questionnaires administered at the end of each session measured stated members satisfaction with the meeting. Goal of the study was to determine whether there were any establishable relationships between amount of member participation, both overall and by category, and stated member satisfaction. The findings indicated a statistically significant positive correlation between stated member satisfaction and group-oriented types of participation (seeking group position and direction, suggesting and demanding group action).

Rippey, Robert M. A 1620 FORTRAN program for compiling a Flanders-Amidon Interaction Analysis Matrix. Education and Psychological Measurement, 1965, 25, (1), 235-237.

Describes the Amidon-Flanders schema for the classification of classroom verbal behavior into ten categories and outlines a complete program which takes approximatley 30 seconds on the IBM 1620 computer to prepare a matrix and make the necessary calculations for up to 1000 observations. Notes that a printout of this program is available from the author on request.

Ryans, David G. Notes on the criteria problem in research, with special reference to the study of teacher characteristics. *Journal of Genetic Psychology*, 1957, *91*, 33-61.
A discussion of communications relative to the nature, characteristics, indentificaton, and measurement of criteria with particular attention to problems confronted in the investigation and attempted prediction of characteristics of teachers and similar groups. The article was an outgrowth of the questions and problems with which the staff of the Teacher Characteristics Study was confronted. (22 references)

Ryans, David G. *Characteristics of teachers: their description, comparison, and appraisal*. Washington, D. C.: American Council on Education, 1960, 416.
A classic, this work is referred to by numerous reviewers concerned with classroom behavior.

Ryans, David G. Assessment of teacher behaviors and instruction. *Review of Educational Research*, 1963, *33*, (4, October), 415-441.
A comprehensive five year review; particularly relevant sections included are: classifying teacher behavior, observation and assessment of teaching, interpersonal relations in the classroom and summary of teacher-student variables considered in the literature.

Schalock, H. Del. *An overview of the Teaching Research system for the description of teaching behavior in context*. Monmouth, Oregon: Teaching Research, A Division of the Oregon State System of Higher Education, November, 1967, 34.
Represents an effort to develop a conceptually sound, relatively exhaustive measure of teaching behavior and the contextual variables which influence it. An effort has been made in this system to move beyond previous efforts and to overcome many of their limitations, and to provide a means of looking at teaching behavior not only in the classroom but wherever and whenever it occurs. Main headings include: The Methodology of the System; The Content of the System; and The Utility of the System. (19 references)

Schalock, H. Del. *Evolution, experience, and adaptive systems: an emerging theory of human development*. In preparation.

Schalock, H. Del. *The conceptualization and measurement of teaching behavior*. In preparation.

Schalock, H. D., Beaird, J. H., & Simmons, Helen. Motion pictures as test stimuli: an application of new media to the prediction of complex behavior. U. S. Office of Education, Title VII Project No. 971. Monmouth, Oregon: Teaching Research Division, Oragon State System of Higher Education, 1964.

The purpose of this study was to test the theoretical position that the more closely test stimuli represent the stimuli present in life situations, the more likely responses to test stimuli will predict behavior occurring in life situations. The study was carried out in the context of teacher education, with classroom behavior of student teachers used as the criterion to be predicted. Four tests were used as predictors in the study: (1) The Minnesota Teacher Attitude Inventory, (2) a situational response test employing written verbal stimuli and restricted response mode (the Word Test), (3) a situational-response test employing motion picture stimuli and restricted response mode (the Film Test), and (4) a situational response test using motion picture stimuli and free response mode (the Simulation Test). The criterion measure was the behavior of subjects in actual classroom situations. Direct observation of categorized behavior was used for purposes of criterion measurement.

In general, the basic hypothesis of the study was considered to be substantiated. In was noted that it became necessary to (1) develop a conceptual framework from which relevant variables of teacher behavior in the classroom could be identified, and (2) devise predictor and criterion measures of these variables. This resulted in a model and produced measures which gave evidence of being both relevant and effective. (55 references)

Schalock, H. D., Micek, S., & Weigel, V. The Teaching Research System for describing teaching behavior in context: a training manual. In preparation.

A self-contained training package. The manual provides an overview of the system, significant methodology and definition of categories. A coordinated workbook includes training exercises -- both written and visual.

Simon, Anita (Ed.) Classroom Interaction Newsletter. Vol. I. Philadelphia: Temple University, 1965.

Placement on mailing list of newsletters can be obtained by writing to Educational Psychology Department, Temple University, Philadelphia, Pennsylvania.

Smith, B. Othanel and others. A study of the logic of teaching. U. S. Office of Education Cooperative Research Project No. 258 (7257) Urbana: Bureau of Educational Research, College of Education, University of Illinois, 1962.

Smith, B. Othanel. Recent research on teaching: an interpretation. High School Journal, 1967, 51, (November), 63-74.

Takes a broad view of research on teaching. Notes that investigation may be divided into three groups: (1) affectively oriented, (2) cognitively oriented, and (3) multi-dimensional systems. Interpreted in another way, they may be classed by differential emphasis placed on phase of teaching process, i.e., input, output (response) or both. Input type said to correspond to cognitive group; output to "affective type when they code modes of reinforcement." Common features of recent research studies are noted as: (1) emphasis on observation of actual teaching behavior instead of static elements and theories, (2) attention given to language and its role in instruction, (3) recognition that teaching involves some sort of interaction between teacher and pupils. Discusses problem of how to choose among systems available. Notes that a system of categories posesses no truth value; it is appropriate to ask how precise, neat or elegant the system is, but value depends on review of actual research. The author then reviews some research results. On the question of the utility of observation systems, it is suggested that training of teachers is paramount and systems can be used to develop a schema for the selection and organization of materials and content in these programs. Discusses pros and cons of such use.

Smith, Henrietta T. A comparison of interview and observation measures of mother behavior. Journal of Abnormal and Social Psychology, 1958. 57, (November), 278-82.

In order to compare the adequacy of interviews and observations as method, 30 mothers were studied by means of individual interviews and controlled observation while interacting with their children. Neither method was found to be completely superior to the other by the measures used: consistency of observed behavior when a required task was interpolated, replication of earlier findings on the antecedents of dependancy behavior, and similarity between observed and reported behavior. In general, it was concluded that the interview was a preferable method only because it allows coverage of a wider range of behavior than does an observation. However, it was found that observation of behavior discriminated "defensive" mothers better than the interview.

Soar, R. S. New developments in effective teaching. The American Biology Teacher, 1968, 30, (January), 43-7.

Describes Flanders Interaction Analysis. Reviews findings of studies using systems to discover nature of effective teaching. Notes that system can also be used to help a teacher learn to control his own verbal behavior in the classroom. Discusses the largest study of this type, Amidon (1966). States that although not yet complete, work shows clear differences between teachers trained to use an observational system to gain feedback on their own behavior in teaching, and teachers who have not been trained in this fashion. Presents a section on a typical workshop in interaction analysis. (13 references)

Sweatman, C. Operation: new outlooks: a self-assessment method for helping teachers change their behavior. The Clearing House, 1964, 41, (October), 67-73.

Discusses Inservice Training Demonstration Center of the Aurora (West) (Illinois) Public Schools where the author serves as director. Tools and techniques for self-assessment are: interaction analysis (Flanders) style of teaching inventories, student-teacher discusssions in the affective realm, and examination question analysis. Discusses fully each technique.

Interaction analysis is made by groups of teachers working together. Data is developed from two tape recordings brought by each teacher of his typical class sessions - one usually in subject matter content, the other a discussion on the topic of "cheating".

Notes that reactions of teachers to program vary from positive (supporting) to negative (threatening). Demonstration Center Program is said to have received considerable visitation and cooperation through summer institute programs.

Waetjen, W. B. Recent analyses of teaching. National Association of Secondary School Principals Bulletin, 1966, 50, (December), 17-29.

Gives brief review of early work in analyses of classroom behavior. Outlines in more detail four recent researches: Hughes study of elementary teaching, Bellack study of high school teaching, Flanders study of teacher influence, and Perkins study of classroom activity. Notes recurring patterns in researches show a great difference between what and how we profess to be teaching, and what is actually going on in the classroom. States that all studies show the teacher as dominant and the pupils as passive. Teachers make very little use of pupil behavior in helping to develop curriculum content. Article particularly useful because of succinctness in characterizing essence of studies.

Watters, W. A. Annotated bibliography of publications related to teacher evaluation. Journal of Experimental Education, 1954, 22, (4, June), 351-367.

Considered as an extension of the Domas and Tiedman bibliography, 99 entries - covers literature from May, 1949 through March, 1953.

Weick, Karl E. Systematic observational methods. In Lindzey, Gardner and Aronson, Eliot. (Eds.) Handbook of social psychology. Reading, Massachusetts: Addison-Wesley, (in press).

Included in the bibliography of Biddle, 1967, the Weick discussion will presumably bring up to date the earlier article by Heyns and Lippitt in the 1954 edition of the Handbook of Social Psychology.

Withall, John. The development of a technique for the measurement of social-emotional climate in classrooms. Journal of Experimental Education, 1949, 17, (March), 347-61.

Describes a technique developed for assessing the social-emotional climate in a classroom by categorizing teacher statements contained in typescripts made from sound records of class sessions. The technique was shown to have objectivity, reliability, and validity.

Withall, John. An objective measurement of a teacher's classroom interactions. *Journal of Educational Psychology*, 1956, *47*, (4, April), 203-12.
An examination of the way in which the teacher fulfills his function in the classroom particularly with respect to his distribution of interactions with the individual learners. The regular class sessions of an eighth-grade art class were recorded and time-lapse photographs were taken to get a fairly complete view of the interactions and groupings in the classroom. It was concluded that we may not readily assume that even a teacher who displays a high degree of social sensitivity and who develops considerable rapport with his pupils will distribute his attention in the way which he and others on the basis of objective evidence and assessment of each pupils' needs would deem desirable and necessary.

Withall, John. Research tools: observing and recording behavior. *Review of Education Research*, 1960, *30*, (5, December), 496-512.
Offers a brief historical backdrop to current (1960) efforts at identifying, assessing, and quantifying teacher-learner interactions in the classroom; identifies some of the major studies that have developed methods and instruments for observing and recording classroom behaviors; and indicates the directions in which present trends in research seem to point.

Wright, E. & Muriel J. Development of an instrument for studying verbal behaviors in a secondary school mathematics classroom. *Journal of Experimental Education*, 1959, *28*, (December), 103-121.
A description of the design of an instrument for direct observation of the verbal interaction of teacher and pupils in a mathematics classroom. The design required the selection of criteria for judgment in secondary school mathematics; the devlopment of an observational schedule based on these criteria; and the empirical assessment of the instrument in the classroom. Support for this design was sought in a brief empirical study of aspects of validity and reliability of such an instrument including effective ways of reporting the observations.

The three main frames of reference used were: ability to think; appreciation of mathematics; and, attitude of curiosity and initiative.

Yamamoto, Kaoru. Evaluating teacher effectiveness: a review of research. *Journal of School Psychology*, 1963-64, *2*, (1), 60-71.
Under major headings of Problems of Criteria and Research Methods, and of Observation of Classroom Activities, current views are summarized. (27 references)

Compilation of Studies from ERIC

Self Evaluation

Completed Studies

Allen, Dwight W. and others. Effects of feedback and practice conditions on the acquisition of a teaching strategy. 1966. 20 p. ED 013 794. Price: MF $0.25; HC $0.88.

To compare several methods of developing classroom questioning (probing) techniques via distributed practice and immediate feedback, when the latter employed videotaped performances of the learner, 85 interns were videotaped on four occasions during the first 20 minutes of regular classroom lessons. In between tapings they received 30 minutes of supervision, in which they viewed playbacks of earlier teaching along with a critique from an experimenter who provided discrimination training. Within-session feedback was held constant, and amount of practice and delayed feedback was manipulated over four experimental groups. A post-test was videotaped about seven weeks after training. Interns were trained in probing techniques (clarification, critical awareness, redirection, prompting, refocus) which depended on pupil response, as well as an encouraging divergent thinking, role play in brief, and pupil summary. Treatment differences, though not entirely consistent, favored massed practice-immediate feedback over distributed practice-reinstated feedback in initial acquisition of probing behaviors. The former also produced significantly more frequent probing than distributed practice and immediate feedback. Retention inferences can be drawn from the fact that distributed practice-delayed feedback groups maintained higher probing response rates on the post-test than did massed practice-immediate feedback.

Anderson, John E. The Auto-critique method of instructional evaluation. July, 1964. 15 p. ED 013 634. Price: MF $0.25; HC $0.68.

Of 26 full-time members at Columbus College, 19 voluntarily participated in a study of a self-evaluation procedure. Using a seven-point scale, each participant rated himself on (1) speaking voice, (2) mannerisms, (3) knowledge of subject, (4) his enthusiasm, (5) class enthusiasm, (6) digressions, (7) organization and preparation, (8) use of analogies, examples, and illustrations, (9) handling of questions, and (10) general class atmosphere. He then recorded two class sessions during a two-week period, and followed his review of the tapes by another self-rating. Although no significant differences were found in the two ratings, after listening to the tapes of their classes, five teachers rated themselves more favorably and six placed themselves lower on the scales. Thus, there is evidence that over half of the participants were sensitive to the information obtained from the tapes. The author concluded that, although lack of external criteria makes this procedure unsuitable for merit rating purposes or for comparison of one instructor with another, the method has promise for the individual teacher's self-improvement activities.

Belt, W. Dwayne. Micro teaching -- observed and critiqued by a group of trainees. February, 1967. 11 p. ED 011 890. Price: MF $0.09; HC $0.44.

Micro teaching at Brigham Young University consists of the presentation of a lesson by a student teacher to a microclass of three to five high school students. When these students are not available, the microclass is composed of his peers from the college class. The trainee's instructor, other members of his college class, and the microclass members evaluate his teaching performance, which is videotaped and replayed immediately so he can see himself in action. The instructor, with the trainee, decides upon one or two areas of major difficulty on which the trainee will concentrate in his next presentation, which may be made immediately or up to a week later, and is always done with a different class. This "reteach" is also videotaped and evaluated. The sessions, involving 490 student teachers, have also been used in inservice training. Tentative conclusions are -- (1) provision for immediate feedback and self-observation are unique, (2) microteaching introduces the trainee to different types of classroom situations, (3) videotapes enable the trainee to see himself interacting with students, (4) comments and suggestions of fellow students are valuable, and (5) performance is usually improved following evaluation and playback. Ninety-six percent of the trainees felt they benefited from microteaching. Research on microteaching as a possible substitute for part of student teaching is suggested. This paper was presented at the American Educational Research Association annual meeting (New York, February 1967).

Baird, J. Hugh and others. (Brigham Young University, Provo, Utah) Micro-teaching at Brigham Young University. February, 1967. 7 p. ED 011 260. Price: MF $0.09; HC $0.28.

Microteaching is the creation of a miniature teaching situation under easily controlled conditions, with immediate feedback for the student teacher. One hundred forty students in six methods courses each teach a self-contained four to six minute lesson on a single, specific concept to a "class" of three to five local students at the appropriate grade and age level. The methods class and their instructor are present, and the student's performance is videotaped. Both the class and the college students complete evaluation forms. One form asks -- "what specific idea was the teacher trying to teach," "did you learn it," "were you interested in the lesson," and "how could the teacher have done better." Evaluation involves, first, a general, usually positive, discussion of the performance and then playback of the videotape, with more detailed and critical comments by the trainee, the instructor, and the college class. The procedure is repeated more briefly when the trainee reteaches the lesson to a different group of pupils. Conclusions concern (1) the potential usefulness of a videotape bank, from which tapes could be drawn for particular purposes at various stages of training, (2) the videotaping of "live" student teaching, and (3) the development of desirable self-concepts among student teachers via combining videotape tactics with training in interaction analysis.

Carleton College use of video tapes in training secondary school teachers. (Carlton College, Northfield, Minnesota) November, 1966. 4 p. ED 011 245. Price: MF $0.09; HC $0.16.

The purposes of this Associated Colleges of the Midwest Pilot Project were (1) to determine the feasibility of using portable, low-cost TV equipment to record spontaneous classroom teaching-learning activities conducted by experienced teachers, (2) to produce some edited video tapes for use in professional education courses, and (3) to experiment with video tapes in appraising the performance of student teachers. The approximately 300 hours of recorded activity cover various instructional tactics for slow and gifted learners, illustrate the effects of teacher attitudes and of different approaches to discipline problems, and depict such methods as discussion, review, and supervised study. Subjective evaluations of the tapes by instructors and students were encouraging. The chief recommendation was for more continuity of action as opposed to the short, illustrative "clips" originally designed to keep pace with a course outline. Greater continuity would permit observers to "teach along" with the teacher. Since the tapes can be stopped and reversed at any point, students can discuss what the teacher had done or might do next. The activities of 70 student teachers were also taped, and student teachers "profited greatly" from the self-evaluation permitted by viewing their own tapes.

Dugas, Donald G. Micro-teaching -- a promising medium for teacher training. (National Federation of Modern Language Teachers Association) March, 1967. 8 p. ED 013 560. Price: MF $0.25; HC $0.40.

That micro-teaching can be used effectively for teacher training and retraining was indicated by a 1966 NDEA Institute where participants viewed on video-tape and discussed the work of a teacher in a small demonstration class of high school French. Each member himself taught two 15-minute class segments of the same class, which was also video-taped. By having the teacher view his own tapes, he could more fully appreciate constructive criticism offered by others, recognize his own strong and weak points, and learn to evaluate his own performance as a teacher. Conclusions based on the institute's work indicated that (1) micro-teaching is an effective device in retraining experienced teachers, (2) it is difficult to determine how adaptable micro-teaching is to advanced-level courses where the subject matter is still only vaguely defined, (3) the video-taped recordings are an excellent means of studying a participant's grammar and phonology, and an ideal basis for creating remedial materials. A partial evaluation checklist for teaching vocabulary is included. This article appeared in "The Modern Language Journal", volume 51, number 3, March 1967, pages 161-166.

Kallenbach, Warren. Microteaching as a teaching methodology. nd. 6 p.
ED 013 791. Price: MF $0.25; HC $0.32.

Various research on microteaching is briefly reviewed. The method developed at Stanford consists of the presentation of five - ten minute videotaped lesson segments to groups of four to six pupils. These lessons were evaluated by the supervisor and the pupils and then discussed by the intern and the supervisor during the playback. The lesson was immediately retaught with a comparable group of pupils. A critical analysis followed this videotaping, using the same procedures. No significant differences in judged teacher competence were found between randomly selected intern teachers with summer student teaching experience and those with microteaching experience at Stanford. Several teaching skills have come from the microteaching project (1) establishing set, (2) establishing appropriate frames of reference, and (3) achieving closure. Another study tested the effects of self-feedback and reinforcement on the acquisition of a teaching skill and found that self-feedback was relatively ineffective as compared with the pointing out of salient cues in teaching to which reinforcement should be attached, combined with the supervisor's positive reinforcement during the playbacks. A final study demonstrated that showing a student what to do was more effective than telling him. This paper was presented at conference on "Instructional Methods and Teacher Behavior" (Berkeley, November 21-22, 1966).

McDonald, Frederick J. and others. The effects of self-feedback and reinforcement on the acquisition of a teaching skill. 1966. 30 p.
ED 013 782. Price: MF $0.25; HC $1.28.

To test the relative effectiveness of three training procedures for acquiring a teaching skill each applying reinforcement principles, Stanford teacher interns were videotaped on four occasions during the first 20 minutes of class. Each intern saw a videotape playback within three days (new lessons were videotaped within two days after playback). Reinforcement training was the variable, with the predicted order of effectiveness going from self-administered feedback to experimenter-administered feedback, to experimenter-administered feedback with cue discrimination training. A control group and the following three experimental groups formed were -- (1) self-feedback group (S-F) instructed in the educational relevance of increasing student participation, defined in terms of pupil participation responses (PPR), with emphasis on immediate reward of PPR's (playbacks viewed alone, examples and a rating chart provided), (2) reinforcement - only group (R) received the same instructions as S-F (viewed playbacks with an experimenter, who reinforced interns' reinforcement of PPR's), (3) reinforcement and discrimination training group (R and D) received the same instruction as S-F (experimenter served the same function as for R and also gave discrimination training including cues, suggestions, and possible effects). Results were analyzed by analysis of variance, T tests and multiple regression analysis. Predictions were borne out. Suggestions for future studies and for improvement of self-feedback are included.

Studies in Progress

Johnston, Donald P. (Memphis State University, Tennessee) Selected aspects of self-supervision by student teachers. EP 010 969. Proposal date: 1-15-67; Start date: 9-8-67; End date: 6-30-68.

The relationship between student-teacher attitudes and behavior will be examined in a study that will explore the effects on attitude produced by self-supervision. Pre- and post-tests will be used to evaluate the attitude changes produced in four groups of student-teachers preparing to teach secondary school. Behavior changes of each student will be determined by the evaluation of a sequence of two microteaching lessons that will be evaluated by different combinations of (1) self-analysis by the Flanders System of Interaction Analysis and (2) interaction analysis by the instructor. A stratified, random sample will be selected following a three-way division of student-teachers on the basis of scores on the Minnesota Teacher Attitude Inventory. The sample will be divided into four groups of 24 students. Each student will develop a 20-minute teaching lesson from his own content area to be taught to a class of five secondary pupils. Students will analyze their lessons from videotape recordings. After the first lesson has been taught and analyzed, the same lesson content will be taught to different pupils and again analyzed. Group one will be wholly self-supervised using only the Flanders method for self-analysis. The interactions of group two will be instructor analyzed. Group three will first use self-analysis and then teacher analysis, while group four will reverse the sequence of the two methods. All groups will retake the attitude inventory at the end of the treatment.

Pederson, M. Gordon. (Marquette University, Milwaukee, Wisconsin) A pilot study in the use of videotape and instant replay to accelerate counseling therapy. EP 010 719. Proposal date: 12-15-66; Start date: 3-1-67; End date: 11-30-67.

A pilot study of the use of videotape and instant replay-recall in psychotherapy will be conducted to (1) test the value of this method to accelerate the client's progress in therapy and (2) devise better methods for training doctoral candidates for their role as therapists. To test the effectiveness of this new method, three separate groups will be used. A control group will receive no counseling. The second group will use counseling with the aid of audiotape recordings. The third group will utilize the experimental videotaping to record the counseling session both audibly and visually. Each counselor trainee will counsel two clients using audiotape and two clients using videotape. A statistical analysis will be made by comparing each counselor's evaluation of the second, sixth, and tenth (final) interviews with the evaluations of the other counselors. Additional evaluation of the counseling sessions will be made by a panel of experts in the field of psychotherapy and by a comparison of the clients' pre- and post-test scores on the "adjective check list" scale.

Interaction Analysis

Completed Studies

Amidon, Edmund J. Interaction analysis - recent developments. February, 1966. 10 p. ED 013 776. Price: MF $0.25; HC $0.48.
Modification of Flanders' Interaction Analysis is proposed to encompass some features of related systems and to provide a specific feedback tool for analyzing one's own teaching, formulating questions, observing teaching patterns, diagnosing teaching problems, and for role-playing in the college classroom. Flanders' ten categories are divided into 24. Under "teacher talk -- indirect influence," there are (1) accepts feeling, (2a) praises, (2b) praises using public criteria, (2c) praises using private criteria. Third, "accepts ideas" through (3a) description, (3b) inference, (3c) generalization. Fourth, asks (4a) cognitive memory question, (4b) evaluative question. Under "teacher talk -- direct influence," the categories are (5) lecturing, (6) giving directions, (7a) criticizes, (7b) criticizes using public criteria, (7c) criticizes using private criteria. Under "student talk," "pupil response" is categorized as (8a) description, (8b) inference, 8c) generalization. "Pupil initation" is characterized as (9a) description, (9b) inference, (9c) generalization. Finally, there are (10) silence, and (11) confusion. Flanders' original categories 1, 5 and 6 and the scoring procedures are unchanged. The numbers of the categories characterizing ongoing classroom interaction are recorded in a column, and successive number pairings are entered in a 24 by 24 matrix.

Amidon, Edmund J. & Hunter, Elizabeth. The case approach to preparing for teaching. March, 1967. ED 012 698. Document not available from EDRS.
To help prospective teachers develop teaching skills, pairs of cases (records of real teaching situations) which depict significantly different approaches taken by teachers with a similar classroom problem are verbally described. Each pair of cases is analyzed using the categories of the verbal interaction category system (VICS) which measures teacher-pupil interactions. A number of "teaching bull sessions" are then held in which teaching behaviors appropriate to situations like those earlier analyzed may be practiced. This article is a reprint from "The High School Journal," volume 50, number 6, March 1967.

Amidon, Edmund J. & Powell, Evan. Interaction analysis as a feedback system in teacher preparation. 1966. 13 p. ED 013 798. Price: MF $0.25; HC $0.60.
Four groups of 15 student teachers each were used to test the hypothesis that (a) those taught interaction analysis would be more indirect (accepting of pupil feelings and ideas, encouraging, questioning) at the end of student teaching than those taught learning theory, and

(b) among those taught interaction analysis, those supervised by interaction analysis trained cooperating teachers would be more indirect than those supervised by learning theory trained cooperating teachers. Criterion measures consisted of -- the Department of Secondary Education Test (pre- and posttests), ratings of college supervisors, ratings by impartial observers and interaction analysis trained observers, the Student Perception of Teacher Influence Scale, the Teaching Situation Reaction Test (pre- and posttests), and the Rokeach dogmatism scale. Incomplete data suggests that student teachers trained in interaction analysis -- talked less in the classroom, were more indirect in use of motivating and controlling behaviors, were more indirect in overall interaction patterns, used more extended, indirect (and less extended direct) influence, used more extended acceptance of student ideas. Student teachers whose cooperating teachers learned interaction analysis used least extended direct influence. Paper reprinted from Raths, James and Leeper, Robert R. (eds.), "The supervisor -- agent for change in teaching," ASCD publication, Washington, D.C.

Amidon, Edmund J. & Simon, Anita. Implications for teacher education of interaction analysis research in student teaching. February, 1965. 14 p. ED 012 695. Price: MF $0.25; HC $0.56.

To determine the extent of use of interaction analysis, more than 400 questionnaires were sent to professional educators. Of 186 returns (46 percent), 85 were unanswered because of unfamiliarity with the method. Of the remaining 101, 69 college teachers, principals, supervisors, and elementary and secondary teachers stated that they had had limited experience with it, 18 college faculty members said they were using the technique in programs with student teachers, eight respondents were using it to do research on teaching, and six were using it both for training student teachers and for research on teaching behavior. Respondents cited strengths and weaknesses of the system with regard to the training of observers, the adequacy of the categories used, and the reactions of those learning the system. Major weaknesses were felt to be the use of a number to represent a teaching behavior, and the (to some) threatening prospect of having to analyze one's own teaching behavior. Major strengths were added insights and the operationalizing of methods and theory. Some of the authors' experiences at Temple University are presented with emphasis on students' more favorable reaction to interaction analysis than to a learning theory course. Guidelines for using interaction analysis are presented, and some of the schools using the technique are named. This paper was presented to the American Educational Research Association, Chicago, February 1965.

Baldwin, Patricia. (Texas University, Austin) The evolution of the film analysis of interaction record (FAIR) from the Amidon-Flanders interaction analysis. Appendix G. nd. 6 p. ED 011 596. Price: MF $0.09; HC $0.24.

A detailed listing is given of the revisions that were made to the Amidon-Flanders Interaction Analysis Scale while the film analysis of interaction record (FAIR) scale was being developed. Comments are given for guidance in the use of some of the ratings along with some ground rules and guidelines for making a film rating.

Bloom, Richard D. & Wilensky, Harold. Four observational categories for describing teacher behavior. 1967. 2 p. ED 013 238. Price MF $0.25; HC $0.16.

Based in part on a Skinnerian learning orientation, 4 dimensions of the teacher's behavior are hypothesized as important in mediating classroom learning -- (1) information giving (IG), (2) response elicitation (RE), (3) feedback (F), and (4) teacher control (TC). From 34 to 42 five-minute observations were obtained for each of the four teachers in a cognitive enrichment program for underprivileged preschool children. Recordings were made for each "smallest discernible segment of a teacher's verbal or nonverbal behavior which could be classified into a particular category." Interrater reliability exceeded .90 for each of the 4 categories. The distribution of behaviors among the 4 categories varied significantly among the teachers, with total percentages as follows -- IG - 46 percent, RE - 33 percent, F - 14 percent, TC - 7 percent. Intercorrelations among the observational categories showed, in part, that the categories were mutually restricting. Thus a tendency to give information reduces the likelihood of encouraging pupil responses or providing feedback. Significant differences between teachers were found for the ratio of feedback to response elicitation, assumed to correlate positively with effective teaching. The limited available evidence suggests that the observation procedure does differentiate among teacher styles, but the scale still needs to be validated against external criteria.

Gallagher, James and others. (Illinois University, Urbana) A system of topic classification -- classroom interaction study. June, 1966. 47 p. ED 013 233. Price: $0.25; HC $1.96.

Designed for the use of observers, teachers, and researchers in describing classroom behavior, this model was set up in three demensions -- content skills, concept level (data, concept, generalization), and style (focusing on description, expansion, explanation, evaluation-explanation, and evaluation). Subdividing classroom discussions is accomplished through topic, topic division, topic focus, theme definition, summaries, and topic returns. Classification of topics is by content skills and levels of abstraction (data, concept, and generalization). Discussion style includes description, explanation, evaluation-justification, evaluation-matching, and expansion. Auxiliary categories covered are management, structuring, and activity. Distinction between style categories are made, and a coding system for classification of topics is included.

Galloway, Charles. Nonverbal communication in the classroom. 1967
14 p. ED 011 891. Price: MF $0.09; HC $0.56.

Nonverbal behavior consists mainly of facial expressions, gestures and body movements, and vocal intonations and inflections. In order to provide a model for observing teacher nonverbal classroom activity, 12 categories were developed through the use of two dimensions -- encouraging to inhibiting and teacher initiated to teacher response. Three categories apply to each of the four pairs of locations on these dimensions. Behavior that is both encouraging and teacher initiated shows (1) congruity between verbal intent and nonverbal referents, (2) responsiveness to feedback, and (3) positive affectivity. An encouraging teacher response is (1) attentive and listens to others (2) facilitative by being receptive to others, and (3) supportive of pupils or pupil behavior. Inhibiting teacher-initiated behavior shows (1) discrepancy between verbal intent and nonverbal referents, (2) unresponsiveness to feedback, and (3) negative affectivity. Inhibiting response behavior is (1) inattentive to others, (2) unreceptive to others, and (3) disapproving of pupil behavior. Intensive training of observers is necessary to achieve sensitivity and reliability. An alternative to the category approach is the writing of narrative descriptions of teacher-pupil interaction, with each communicative event in a situation discussed separately. The usefulness of tape recordings for both methods is noted. This paper was prepared for presentation at the AACTE workshop, 1967.

Garrard, Judy. (Texas University, Austin, Research and Development Center for Education) Classroom interaction -- review of the literature.
July 1966. 18 p. ED 013 988. Price: MF $0.25; $0.80.

This paper reviews recent major studies concerned with classroom interaction which encompasses both the verbal and nonverbal behavior of a teacher and the pupils in elementary and secondary classrooms. Review of the theories upon which these studies were based was not within the scope of this study. Part I briefly discussed two approaches to the construction of items for an observational schedule, the sign system and the category system, and reviews four instruments of the objective categorization type. These instruments are those by Bales, Withall, Medley and Mitzel, and Flanders. Part 2 discusses the findings reported from representative studies of classroom interaction concerned with three main areas -- elementary-secondary, intraelementary, and teacher-pupil. Part 3 discusses the history of the development of three elements of classroom interaction research -- measurement, criteria, and data collection. The first of two appendixes presents two previously unpublished research papers. One paper deals with "verbal behavior and social status," and the other deals with "student teachers and interaction analyses." The second appendix presents the "FAIR" categories which are adapted from the Flanders Interaction Scale.

Handy, Ricky and others. The development of FAIR categories. Appendix B. November, 1965. 26 p. ED 011 594. Price: MF $0.09; HC $1.04.

A transcription was made of a group discussion conducted to develop a scale for making quantified ratings of the interactions of student teachers and pupils as observed from a film of a 15-minute lesson presented by the student teacher. The interactions were to be judged on the basis of the Amidon-Flanders Interaction Analysis Scale, and a new scale, called the Film Analysis of Interaction Record (FAIR), was to be developed to enable observers to make and record quick, quantitative judgments of the behaviors observed from the film. Discussions were made on the nuances involved in assigning ratings in such categories as "accepts feeling," "praises and encourages," and "lectures."

Handy, Ricky and others. The development of the mechanics of film rating. nd. 30 p. ED 011 597. Price: MF $0.09; HC $1.20.

A transcription was made of a group discussion dealing with the development of rating scales and the techniques of film rating and of use of equipment. The Amidon-Flanders Interaction Analysis Scale was used as the basis for the development of the Film Analysis of Interaction Record (FAIR). Discussions dealt with such problems of film rating as rating judgments, reliability, reaction times, category changes and refinements, sound equipment, training films, and scoring machines.

Hunter, Elizabeth & Amidon, Edmund. Improving the language skills of "deprived" teachers. 1966. 9 p. ED 012 262. Price: MF $0.09; HC $0.36.

Studies of the classroom verbal behavior of teachers show that many teachers use the same rather narrow verbal interaction patterns because (1) their own school backgrounds did not include exposure to teachers who used varied verbal patterns, (2) they do not now hear varied teaching patterns, and (3) they are not provided with opportunities to practice greater language facility. To increase teachers' facility in verbal interaction, the Verbal Interaction Category System (based on the work of Flanders) was developed by the authors to categorize teacher talk. Its six categories include -- (1) gives information or opinion, (2) gives direction, (3) asks narrow question, (4) asks broad questions, (5) accepts ideas, behavior, or feeling, and (6) rejects ideas, behavior, or feeling. Acceptance of pupils' feelings is especially difficult for many teachers to express and seems particularly important in the teaching-learning process since it encourages children to express their feelings and enables the teacher to deal with and utilize them. Different kinds of acceptance are outlined. Taping of class discussions and writing out broad questions and thought-provoking statements in advance are other suggested tools for improving language facility.

King, Martha and others. (The Ohio State University, Columbus, College of Education) Observations of teacher-pupil verbal behavior during critical reading lessons. February 1967. 36 p. ED 011 819. Price: MF $0.09; HC $1.44.

Verbal interaction between teachers and pupils when they are reading critically is reported. Six hundred fifty-one children and 24 teachers from seven elementary schools in Columbus, Ohio, served as subjects during the nine-month investigation. Twelve classes, two at each of the six elementary grade levels, were given training in critical reading while 12 classes were instructed in literature. Teacher questions and student responses were the main focus of the study. An instrument was devised for observing verbal behavior. Eight categories of teacher questions were influenced by Bloom's approach, and five pupil categories, representing levels of thought, were influenced by Guilfords's structure. Teachers were informed of forthcoming classroom observations which totaled six in number and lasted for 25 minutes. Chi-square was used to analyze the data. The included results indicated that -- (1) there is a definite relationship between teacher questions and quality of pupil responses, (2) teachers improved in their ability to ask questions, (3) training of teachers and special instructional materials influenced verbal behavior, (4) limited grade level trends were discernable in teachers' questions, and (5) developmental trends in pupil responses were identifiable in the experimental group. Tables and the observation directions are included.

Merrifield, Philip R. and others. Factors in OSCAR Ratings of secondary level student-teachers. 1966. 8 p. ED 011 522. Price: MF $0.09; HC $0.32.

This factor analytic study of OSCAR (Observation, Schedule and Records) scores for classroom behavior employed ratings by supervising faculty members of the classroom behaviors of 115 student teachers and their pupils on three occasions approximatley one month apart. Five factors which could be interpreted as independent aspects of teacher and pupil classroom behavior were isolated -- (1) seat work, typically quiet, (2) affection, (3) teacher nonverbal support of learner, (4) teacher verbal support of learner, and (5) "teacher-talk-total," which places emphasis on problem-structuring. Factor means across the three observation occasions showed that (1) teachers assigned greater amounts of seat work as the quarter progressed and that (2) "teacher-talk-total" increased from the early to the middle portions of the quarter but declined towards the end, while seat work continued to increase slowly. Factor loadings on the OSCAR variables are given. This is an abstract of a paper presented at the American Educational Research Association Convention (Chicago, 1966).

Moskowitz, Gertrude. The effect of training foreign language student teachers in interaction analysis. 1967. 21 p. ED 012 261. Price: MF $0.09; HC $0.84.

Fourteen foreign language student teachers were taught the Flanders System of Interaction Analysis, adding a behavioral-science dimension to their customary study of new methods of foreign language teaching. Pre- and post-tests were administered after eight weeks, covering (1) pupil attitudes toward the foreign language, foreign language teacher, and foreign language class, (2) teacher reactions to classroom situations along direct-indirect lines, including possible attitude changes after training, (3) attitudes and degree of satisfaction of student teachers and cooperating teachers toward each other. Tapes were made of four classes, which yielded pre- and post-Flanders grammar and conversation matrices. Significant findings were -- (1) more positive attitudes toward teaching by student teachers, (2) more positive attitudes by pupils toward several items which appear related to classroom behaviors of student teachers, (3) more indirect teaching patterns used by student teachers, and (4) more expression of pupils' own ideas in foreign language classes. Though grammar classes seemed more, and conversation classes less restrictive, similar behavior changes were noted in both. Student teachers felt the Flanders system should become a requirement for foreign language teachers. Results appear similar to those found in earlier studies of the use of interaction analysis in teacher education programs. This paper was presented at the annual meeting of the American Educational Research Association (New York, February 1967).

Ohnmacht, Fred W. Relationships among field independence, dogmatism, teacher characteristics and teaching behavior of pre-service teachers. February, 1967. 21 p. ED 011 525. Price: MF $0.09; HC $0.84.

Three studies explored the relationship to two cognitive styles (field dependence and dogmatism) to anticipated and actual teaching style. Factor analysis of scores on a battery of tests (Teacher Characteristic Schedule and Measures of Closed-Mindedness and Field Independence) administered in the first study to 57 male secondary education majors (and, in a replication, to 70 males) led to five style factors -- (1) planned, organized, dynamic teaching style, (2) favorable attitudes toward school personnel and sympathetic attitudes toward pupils, (3) open-mindedness, (4) analytic set, and (5) learning-centered viewpoints and low emotional stability. Closed-minded, field-dependent subjects were found least likely to be surgent (responsive, sociable) teaching personalities. In the third study, lessons for each of 46 student teachers were taped in an eight-week student teaching experience. Contrary to expectation, interaction analysis of the classroom behaviors did not support the hypothesis that field dependent, closed-minded teachers would manifest more direct behaviors. Moreover, there was a slight tendency for field independent subjects to be more direct than dependent subjects in attempts to influence pupils. Among those high on indirect behaviors, males showed more aloof classroom behavior and subject centered attitudes, but less verbal understanding, emotional stability, and field independence. Females showed more surgent behavior and verbal understanding. This paper was read at the American Educational Research Association Convention (New York, February 16-18, 1967).

Openshaw, M. Karl and others. (Ohio State University, Research Foundation, Columbus) The development of a taxonomy for the classification of teacher classroom behavior. 1966. 223 p. ED 010 167. Price: MF $0.36; HC $8.92.

An attempt was made to develop a taxonomy from a synthesis of previous approaches to the description and categorization of teacher classroom behavior. Investigators found that the variety of viewpoints could not be synthesized into one single system. However, some of the categories, approaches, and conceptualizations from previous efforts provided insights from which a taxonomy was evolved which can be used for empirical description of gross and middle-range levels of teacher behavior. The taxonomy and related paradigms were empirically tested in 30 observations of classroom behavior ranging from the first grade through a college graduate course. The taxonomy was subsequently modified. Validation of the final taxonomy was conducted with filmed sequences of spontaneous classroom behavior which were evaluated at timed intervals, as well as with observations of live classroom teaching.

Parakh, Jal S. (Cornell University, Ithaca, New York) To develop a system for analyzing the reactions of teachers and students in biology classes. 1965. 200 p. ED 010 608. Price: MF $0.36; HC $8.00.

A category system for the description and analysis of teacher-pupil interaction in high school biology classes was developed. In the first phase, a heterogeneous sample of teachers and schools was used for observation and development of the category system. Observations were made of lecture and laboratory sessions, verbal and nonverbal classroom communications, and the individual behaviors of both teachers and students. In the second phase, additional teachers and schools were observed, and the tentative category system was revised. Data gathered from 40 lectures and labs plus 40,000 individual observations were processed, and the frequencies of various sequences of behavior were found and analyzed. The categories covered five major dimensions of teacher-student behavior -- (1) evaluative, (2) cognitive, (3) procedural, (4) pupil talk, and (5) silence. Allowance was also made for behaviors that could not be categorized in the dimensions of the category system. The author concluded that teacher-pupil interaction in biology can be studied in detail and that interaction analysis offers sound possibilities for studying science teaching. He further stated that, while the study provides a tentative description, it is not an evaluation or characterization of good or bad, effective or ineffective teaching.

Parakh, Jal Sohrab. (Cornell University, Ithaca, New York) A study of teacher-pupil interaction in high school biology classes. 1965. ED 013 209. Document not available from EDRS.

A category system for systematic observation of high school biology laboratory and lecture-discussion-recitation classes was developed and used to quantify, analyze, and describe observed classroom behavior. The category system was developed by observing eight high school biology teachers once each month for four successive months. The observer recorded verbal behavior and maintained notes of his observations. The category system is composed of five major dimensions -- evaluative (affective-cognitive), cognitive, procedural, pupil-talk, and silence. These dimensions are divided into 16 major categories, 28 subcategories, and a "residual" category for communication which can not be classified by this system. The data obtained from classroom observations were analyzed and the following findings were reported. (1) In lecture classes about 75 per cent of the time was devoted to teacher-talk and 10 per cent to pupil-talk. (2) In laboratory classes about 50 per cent of the time was devoted to teacher-talk and 10 per cent to student-talk. (3) Teacher behaviors in the evaluative, procedural, and cognitive dimensions differed in laboratory and lecture classes. (4) Four operations of teaching were used in the following decreasing order of occurrence -- stating facts, explaining, defining, and evaluating subject matter. This document is available as order number 66-4492 for $3.00 on microfilm, $9.00 xerography, from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48103.

Simon, Anita and others. Programing teacher-pupil interaction patterns. nd. 21 p. ED 013 231. Price: MF $0.25; HC $0.92.

To determine what effects a student teacher's course work has on his actual classroom behavior, 22 student teachers were given 90 hours of observation and behavior training, with particular emphasis on the Flanders System of Interaction Analysis. A control group of 22 stuents was given training in learning theory. The Flanders system was used to observe each student teacher twice at the beginning and the end of the student teaching experience. The cooperating teachers for the Flanders group were also given training in this system. A computer program was used to isolate specific patterns of student teaching behavior which could be attributed to training in systematic classroom observation and to make easier the sheer weight of data processing necessary with the Flanders system. It was found that student teachers trained in interaction analysis tend to be (1) more accepting, (2) less critical, (3) less directive, and have (4) more student initiated talk, (5) more extended student initiated talk, and (6) less silence and confusion in the classroom than student teachers trained in learning theory alone. It is concluded that (a) when both student and cooperating teachers know interaction analysis, the students have a maximum opportunity to develop their own styles of teaching and (b) interaction analysis appears to increase individuality in teacher behavior.

Turner, Richard L. & Denny, David. Teacher characteristics, classroom behavior, and growth in pupil creativity. nd. 14 p. ED 011 257. Price: MF $0.09; HC $0.56.

Exploration of relationships among teacher characteristics, their classroom behavior, and growth in pupil creativity used three measures -- (1) a battery of tests administered to pupils in 30 sixth grade classes (measuring ideational fluency, spontaneous flexibility, redefinition, and sensitivity), (2) observation of the classroom behaviors of these teachers by trained observers using an observation schedule measuring classroom climate, teacher-learning structure, and specific structuring for creativity, and (3) responses by 20 of these teachers to a characteristics schedule scored by resourcefulness, viewpoint, organization, stability, and involvement. Findings were -- (1) imaginative or resourceful teachers use positive motivation to encourage pupil responses and to increase pupils' ability to give unusual uses for common objects, (2) pupil-centered teachers appear to adapt to individual differences to vary materials and activities, and to obtain improved flexibility in student thinking, and (3) highly organized teachers appear to obtain pupil interest and to maintain good pupil-teacher relationships, but they do appear to restrict pupil fluency of ideas. The authors concluded that teacher characteristics and behavior increase creative behavior. This paper was presented at the American Education Research Association Conference (February 1967).

Studies in Progress

McLeod, Richard J. & Bruce, Matthew H. (Cornell University, Ithaca, New York) The effect of instruction in interaction analysis on a student teacher's classroom verbal pattern. EP 010 377. Proposal date: August, 1965; Start date: 7-1-66, End date: 5-31-67.

The Flanders System of Interaction Analysis (FSIA) technique will be used in this study to determine verbal interaction patterns of student teachers under certain conditions. Observations will be made of secondary science student teachers and of cooperating (inservice) teachers. Tape recordings of verbal patterns will be obtained and categorized using the FSIA. Upon completion of this phase, the student teachers will be trained in the FSIA and given feedback using this technique. Nonrandom changes will be identified and related to the verbal patterns of the inservice teachers. These changes will then be compared to those of a control group. Nonparametric statistical techniques will be used.

Parakh, Jal S. (Western Washington State College, Bellingham) A study of relationships among teacher behavior, pupil behavior and pupil characteristics in high school biology. EP 010 651. Proposal date: 12-1-66; Start date: 6-15-67; End date: 9-15-67.

High school biology classes will be observed to categorize the individual and collective verbal behavior of pupils and to relate certain classroom interactions. Research will be conducted in three phases -- (1) a systematic observational technique will be developed for on-the-spot categorization of the verbal behavior of each pupil, (2) the observed behavior of each pupil and the class as a whole will be quantified, described, and analyzed, and (3) relationships will be explored. The sample will consist of three classes, homogeneously grouped by ability, in one high school and three classes, heterogeneously grouped, in another high school. All observations will take place during four full class periods of four consecutive days. Individual behavior will be coded on special seating charts, and classroom discourse will be recorded on tape and then categorized using a modified interaction analysis technique. Relationships of the following classroom interactions will then be identified and explored -- (1) among various pupil behaviors, (2) between pupil behavior variables and pupil propperties and outcomes, and (3) between teacher and pupil behavior variables. This project will follow an earlier study on the classification of teacher behavior in the biology classroom and the description of interactions between biology teachers and their classes.

Schantz, Betty & Sorber, Evan. (Temple University, Philadelphia, College of Education) Relationship of four types of student teacher supervisory conferences to teacher preparation. EP 010 821. Proposal date: 12-22-65; Start date: 6-1-67; End date: 5-31-68.
The effectiveness of four types of conferences between student teachers and their supervision will be examined in terms of the interaction patterns observed in the student teachers' classrooms. Each of 24 student teachers will be observed six times over a one-semester period while teaching elementary social studies and math. During the same period, they will participate in six scheduled conferences with their supervision. These conferences will use either (1) a three-way design of activity between the student teacher, his resident supervisor, and a cooperating teacher, or (2) a two-way design between student teacher and the resident supervisor. Half of the three-way conferences and half of the two-way conferences will be evaluated by the Flanders matrix (1960) of teacher-student interactions. The other conferences will be evaluated by a simple evaluation schedule. Six student teachers will participate in each type of conference. Those in the conferences using Flanders' matrix will receive training in interaction analysis, while those in the other two will have no such training. Interaction analysis is the process of systematic observation by which the behavior or climate within an individual classroom or any organization is measured. The principal hypothesis of the study is that student teachers participating in the three-way conferences evaluated by Flanders' matrix will be more indirect in the classroom than student teachers of the other conference types. Flanders' matrix will be used to gather data in the six classroom observations. In addition, a special rater will observe the student teachers at the beginning and termination of the project, using the evaluation schedule.

APPENDIX

NOTE: Appendix A is added to this report to illustrate the coding results of the interaction analysis on a one-hour video-tape. Each teacher was given a profile of each tape. A discussion followed and the profile interpreted with respect to the teacher's instructional objectives.

Appendix A

PATTERN AND FOCUS OF CLASSROOM INTERACTION

TEACHER Saxifrango Cernua

ACTIVITY Health, Arithmetic

LENGTH OF TIME OBSERVED 40 Minutes

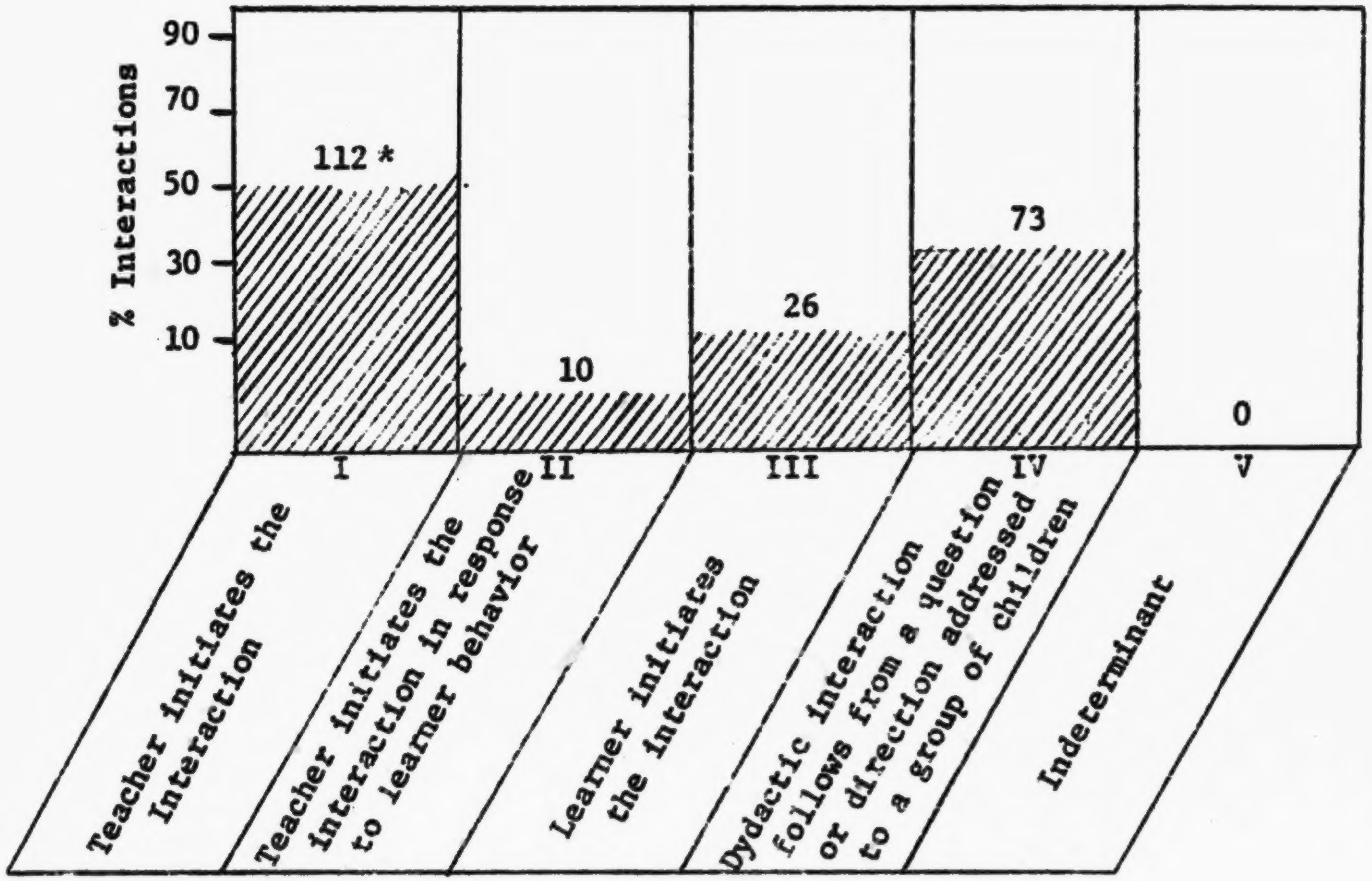


Figure 1. A graphic representation of the total number of interactive exchanges which occurred between teacher and learner(s), and a proportional analysis of the way these interactive exchanges were initiated.

* The numbers above the shaded areas represent the absolute frequency with which the category appeared.

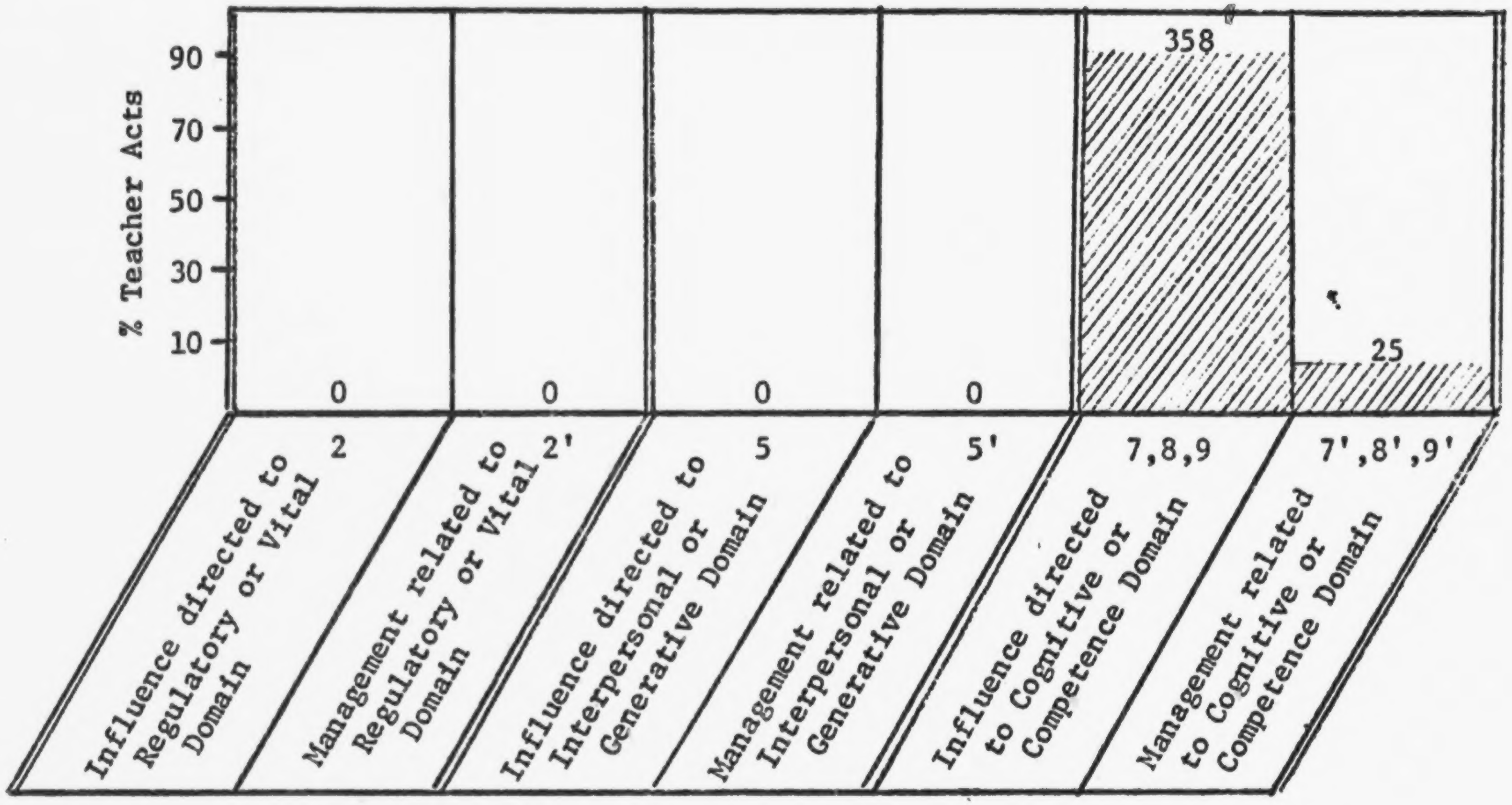


Figure 2. A graphic representation of the total number of teacher acts (messages) which were sent to the learner(s) and a proportional analysis of the distribution of these acts by the three major domains of human development on which a teacher focuses. A further classification scheme is used to identify: 1) those teacher acts that facilitate the development and/or maintenance of the domains of human development, i.e., those teacher acts that serve a management function, and 2) those teacher acts that directly influence the development and/or maintenance of the domains of human development, i.e., those teacher acts that serve a developmental function.*

* The prime symbol, e.g. 2', 5', 7', 8', 9', identifies all teacher acts which served a facilitory function.

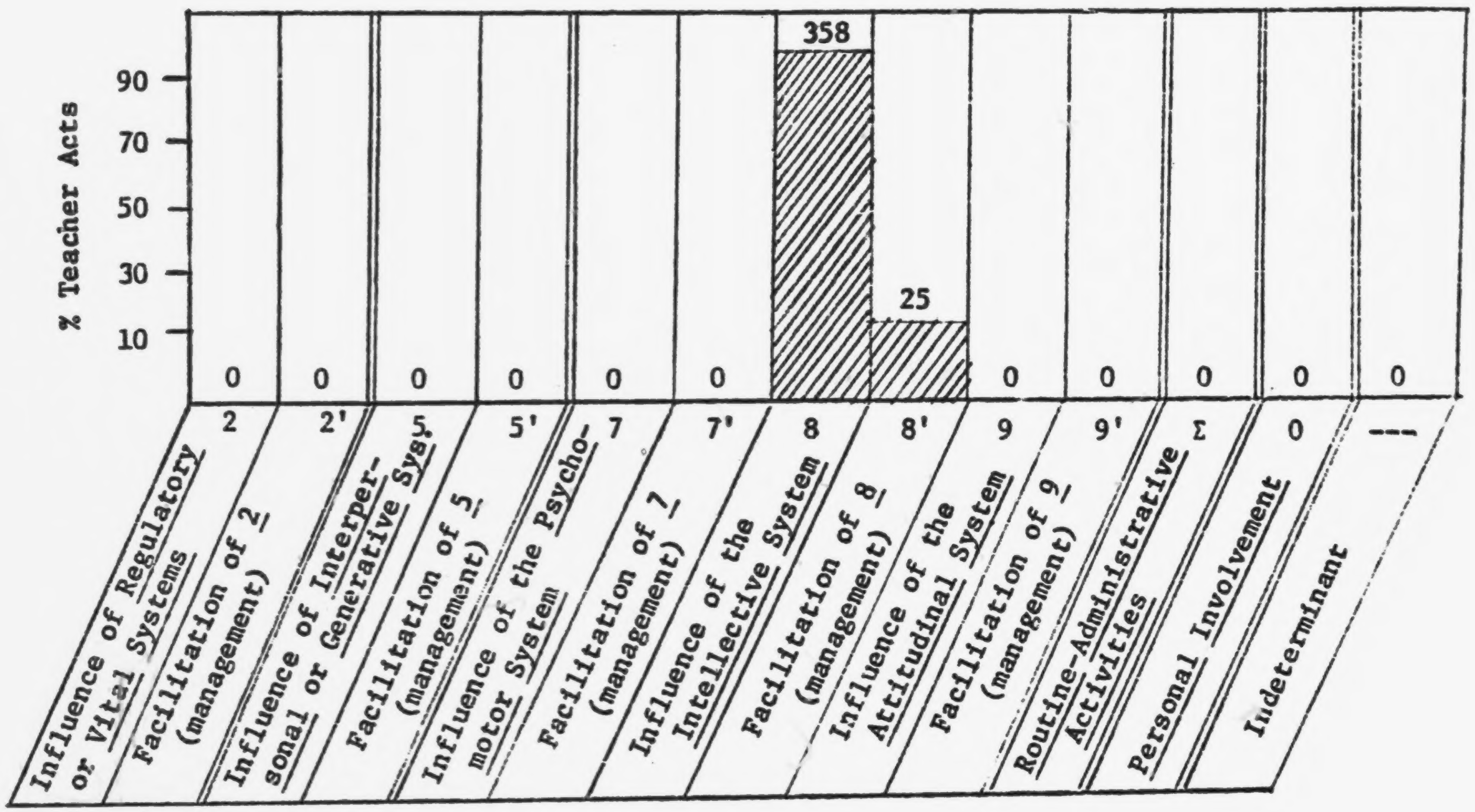


Figure 3. A graphic representation of the proportion of teacher acts as they relate to the teacher's FOCUS, (the areas of human development to which the teacher directs her attention). The areas within which a teacher focuses are: 1) the Regulatory or Vital Domain, 2) the Interpersonal or Generative Domain, 3) the Cognitive or Competence Domain. Within the Cognitive Domain three adaptive systems are identified: a) Psychomotor, b) Intellectual, and c) Attitudinal. In addition, the TR system records behavior that focuses upon Routine-Administrative activities, and the Personal Involvement of the Teacher

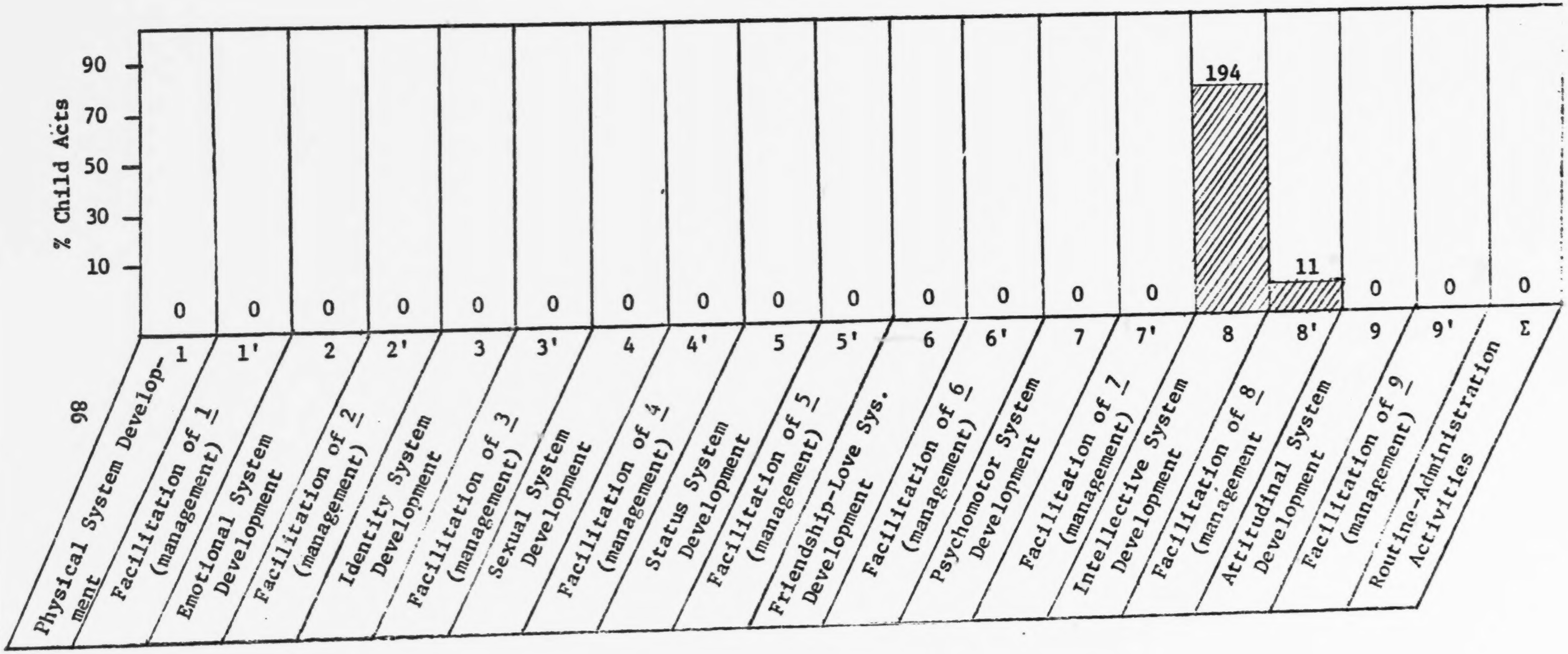


Figure 4. A graphic representation of the proportion of learner acts which were directed to the teacher as they relate to the learner's FOCUS (the area of human development in which the learner is involved). The areas within which a learner focuses correspond to the areas in which the teacher focuses, though the adaptive systems within the Vital and Generative Domains are made explicit when recording learner behavior whereas only the Domains are used when recording teacher behavior.

TEACHING OPERATIONS USED IN INSTRUCTION

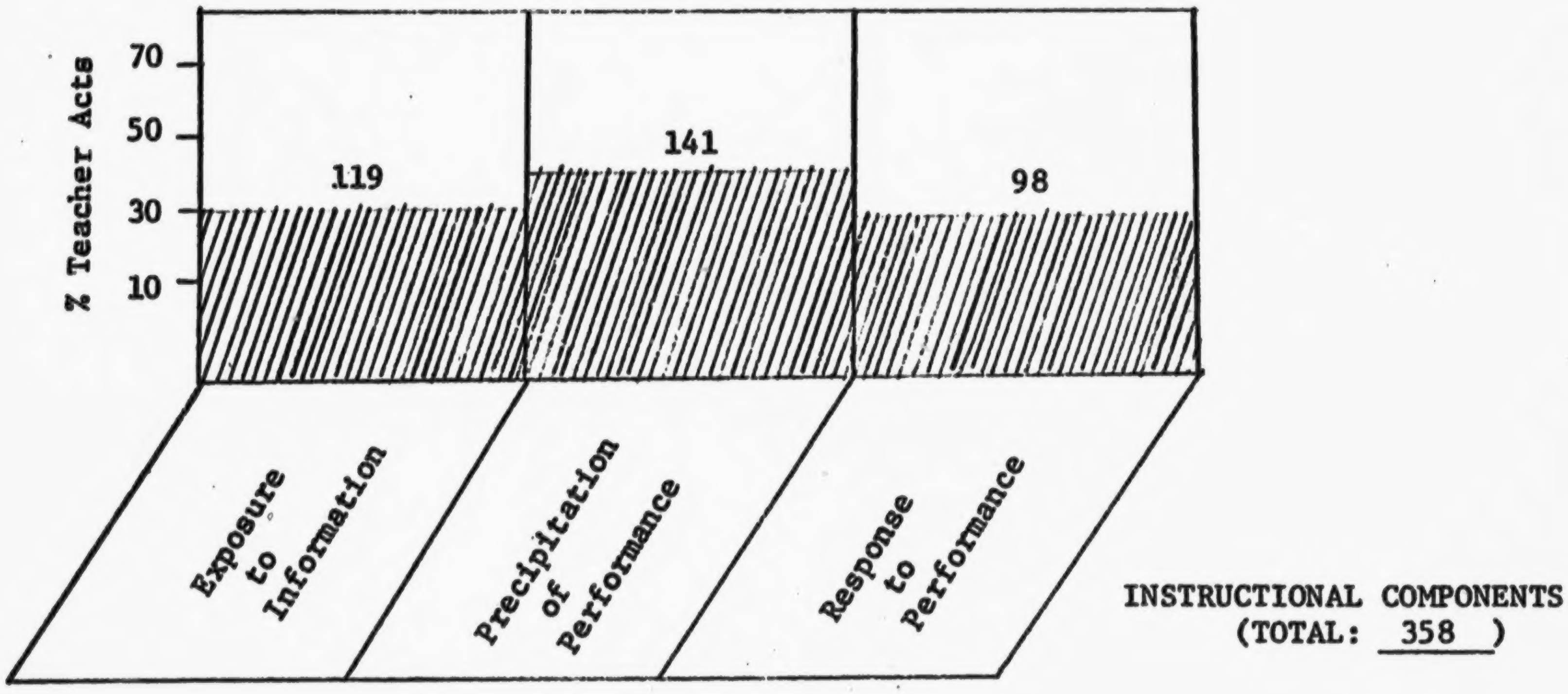


Figure 5. A graphic representation of the proportion of instructional acts used by a teacher which fall into one of the three major components of instruction. The component analysis represents the first level of analysis used in classifying TEACHING OPERATIONS.

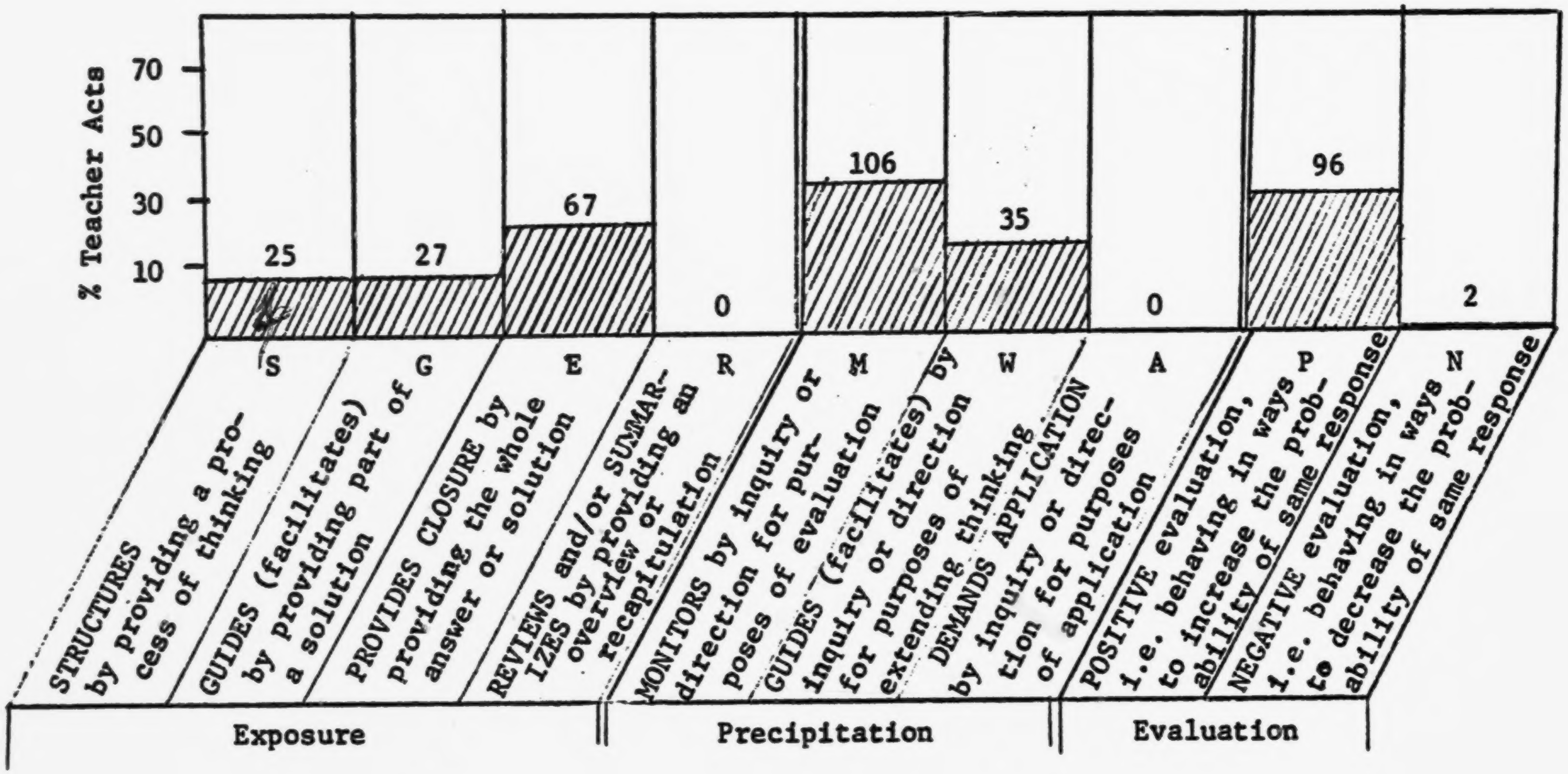


Figure 6. A graphic representation of the proportion of instructional acts used by a teacher which fall into one of the major functions served by teaching operations. The function analysis represents the second level of analysis used in classifying TEACHING OPERATIONS.

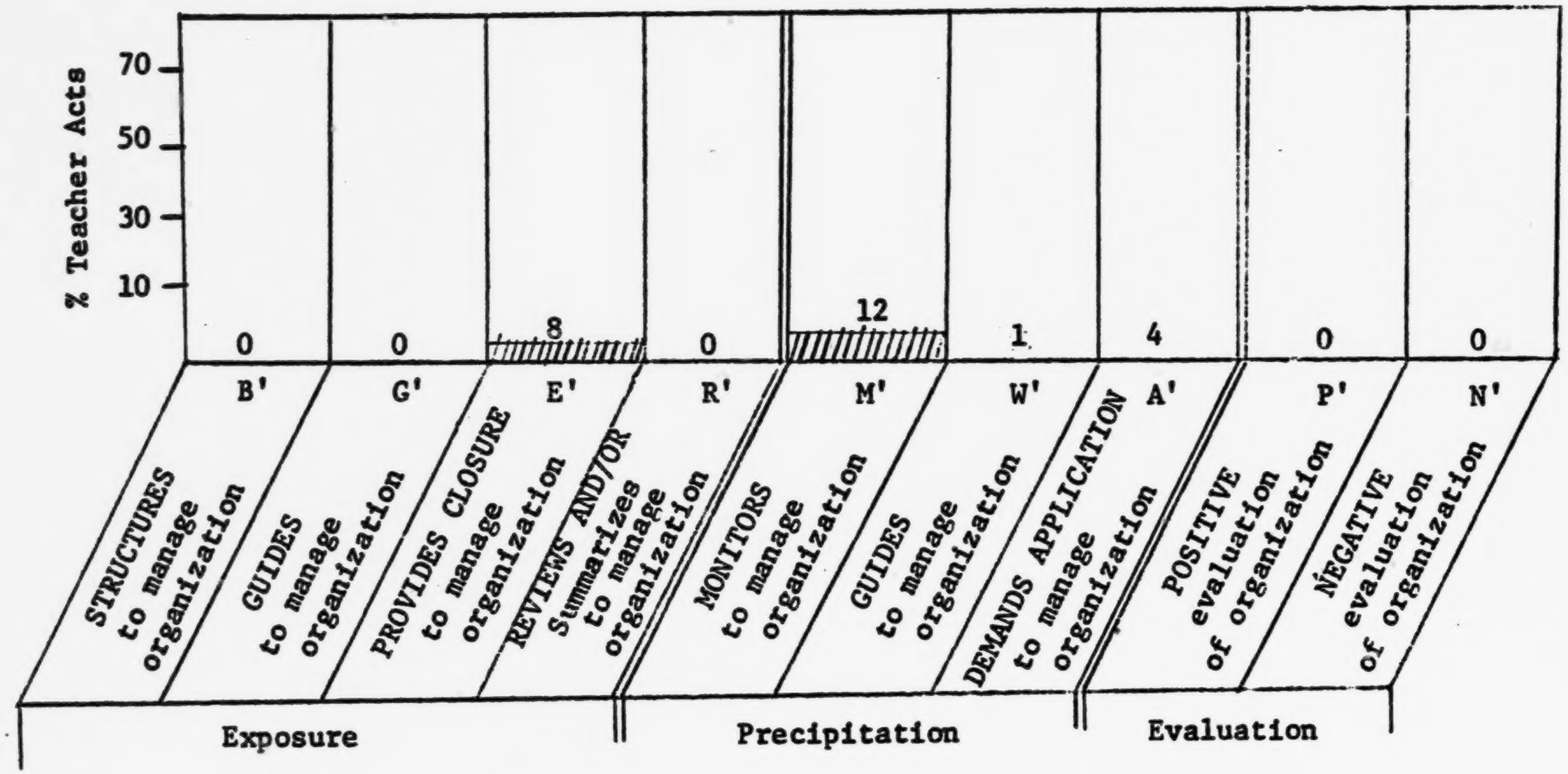


Figure 7. A graphic representation of the proportion of facilitory acts by the teacher which fall into one of the functions served by teaching operations.

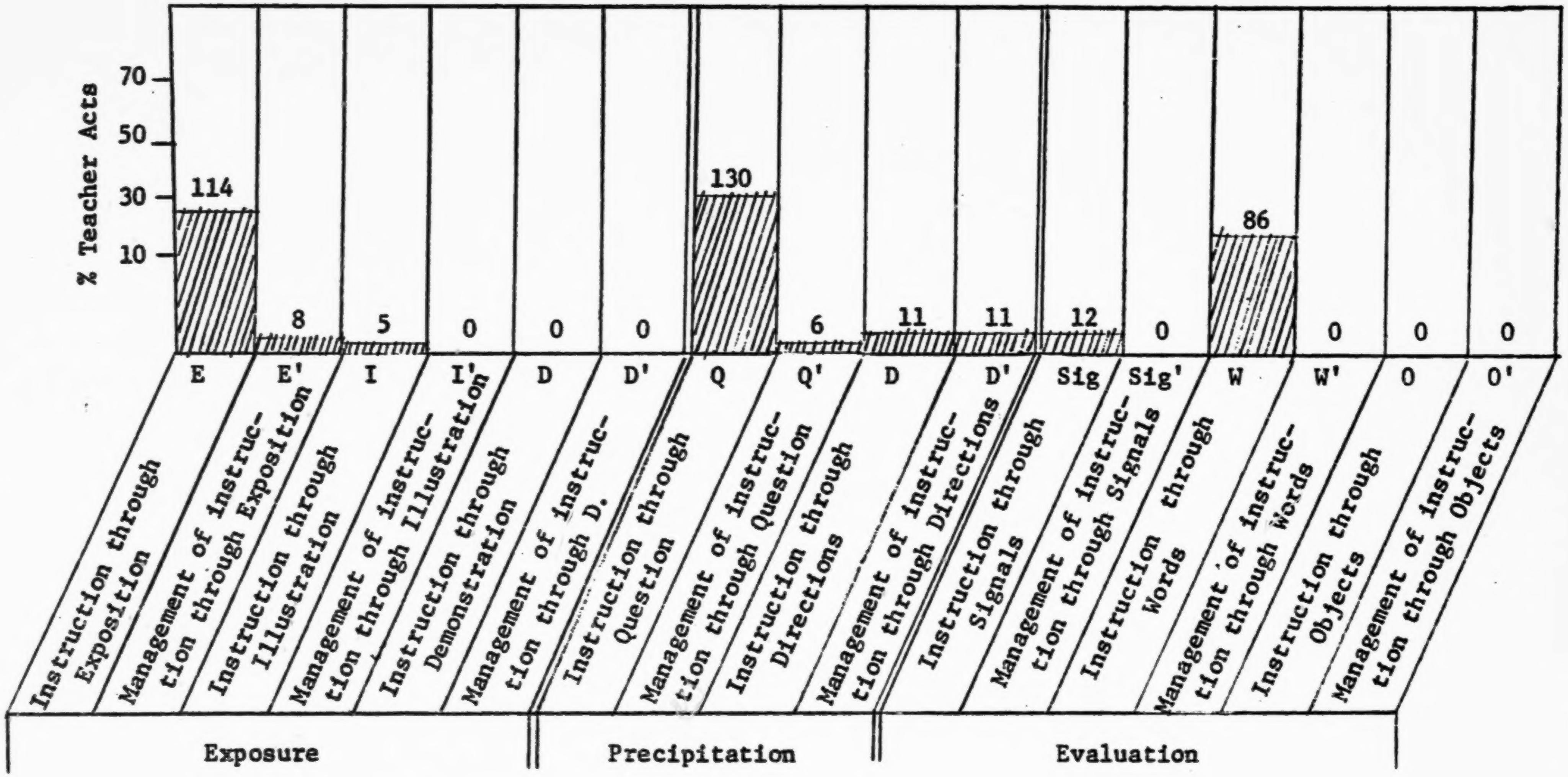


Figure 8. A graphic representation of the proportion of both developmental and facilitory acts used by a teacher classified according to the instructional tactics it represents. The tactic analysis is the third level of analysis in classifying TEACHING OPERATIONS. The tactic analysis identifies "how" a teacher sends a message to a learner.

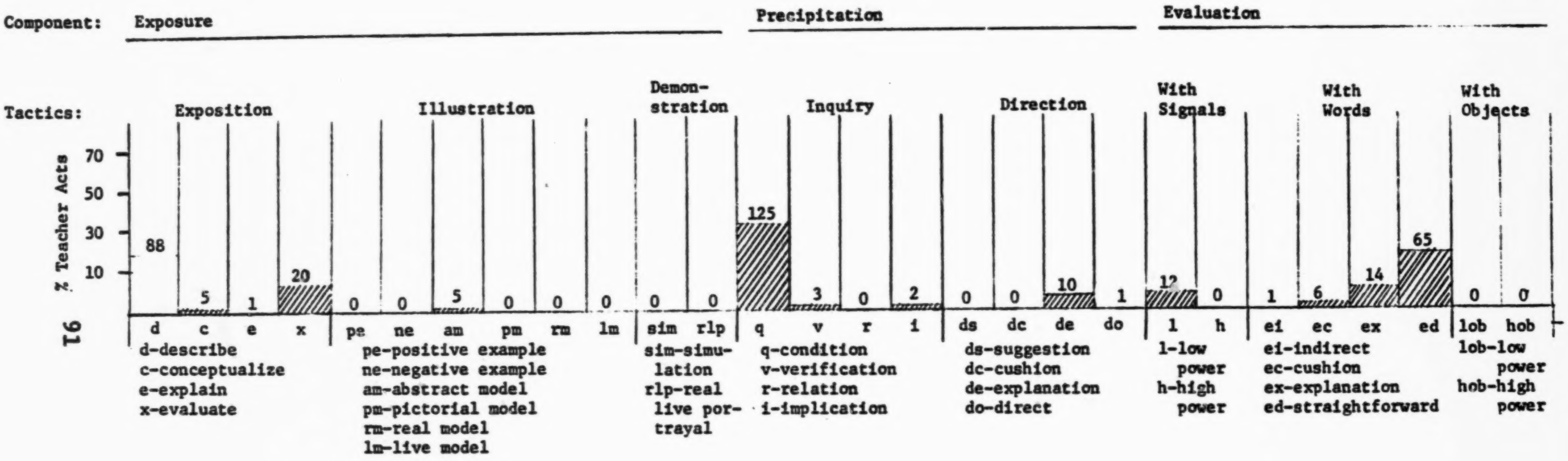


Figure 9. A graphic representation of the proportion of developmental acts used by a teacher, classified according to the instructional moves they represent. The move analysis is the fourth level of analysis in classifying TEACHING OPERATIONS. The move analysis is simply a further breakdown of the tactic analysis described in Figure 8 in that it describes in even greater detail how a teacher sends a message to a learner.

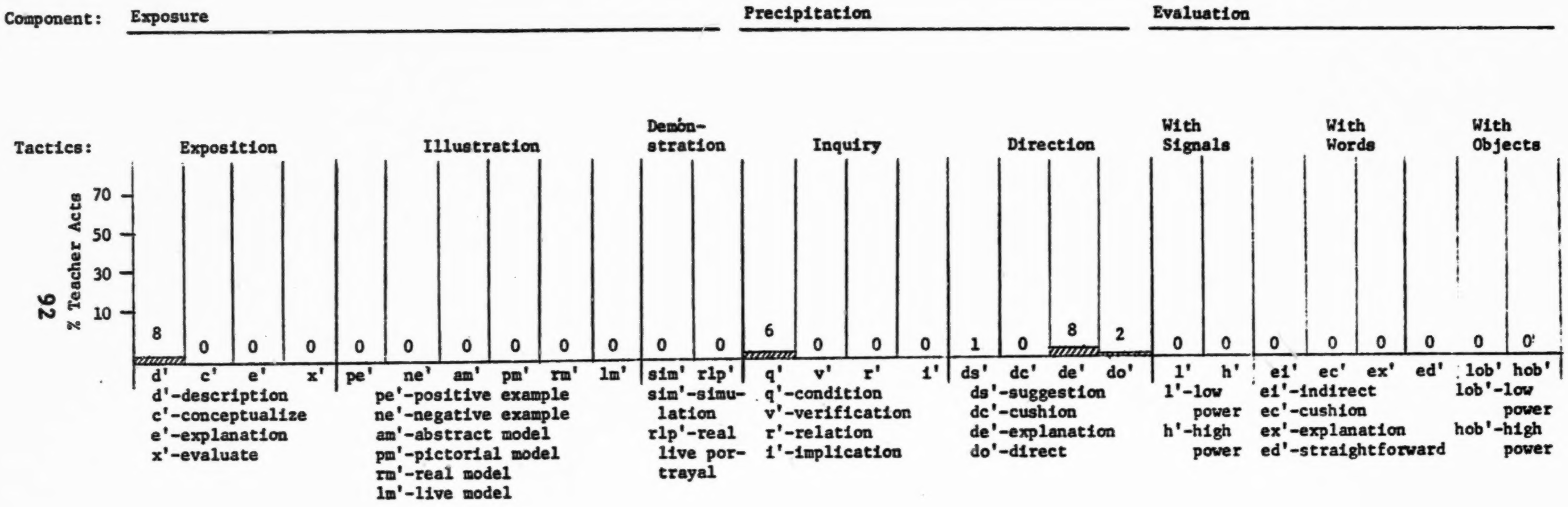
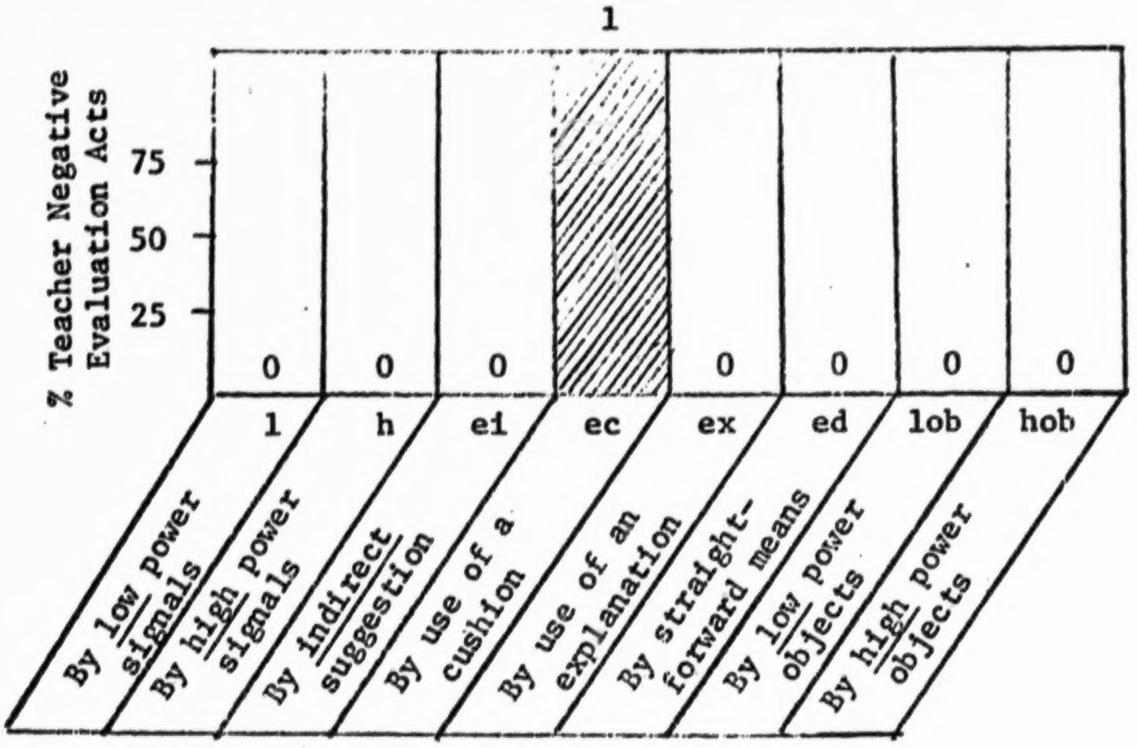


Figure 10. A graphic representation of the proportion of facilitory or management acts used by a teacher, classified according to the instructional moves they represent.

PROPORTION OF CENSORSHIP MOVES IN RELATION TO ALL INSTANCES OF CENSORSHIP OF LEARNER BEHAVIOR

Developmental Evaluation



Facilitory Evaluation

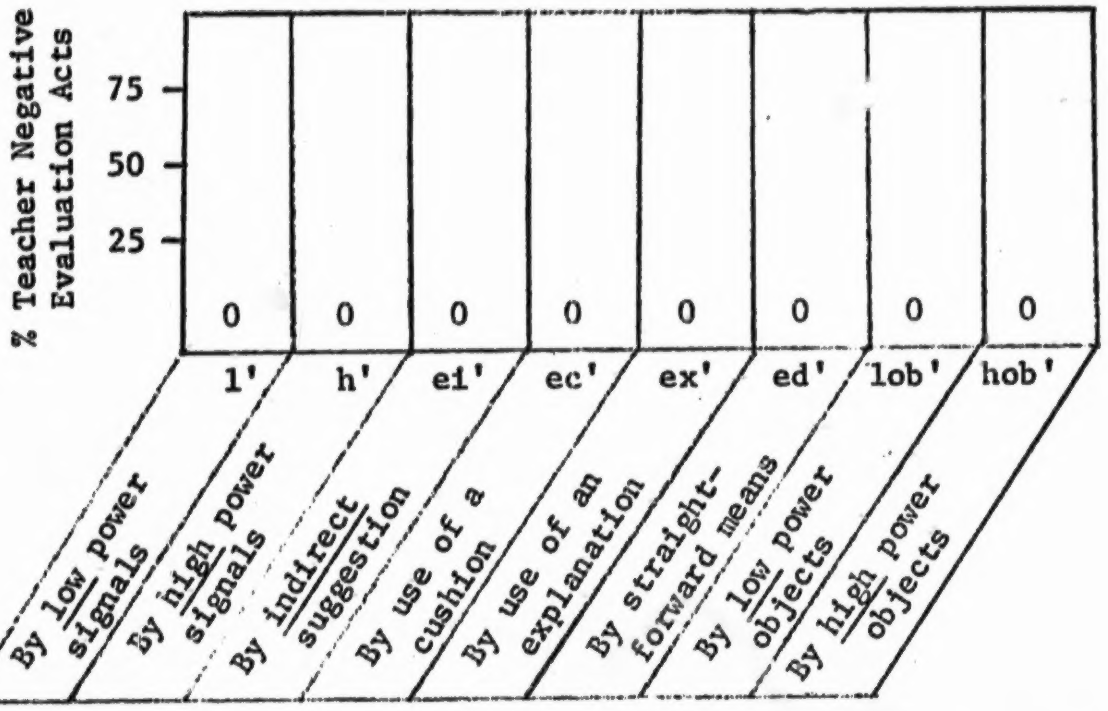


Figure 11. A graphic representation of the various censorship moves used by a teacher. The Developmental Evaluation graph represents the proportion of negative evaluative moves used to evaluate a learner's academic performance; the Facilitory Evaluation graph represents the proportion of negative evaluative moves used to censor or discipline a learner who is either out-of-focus, i.e., a learner who is not in the same FOCUS as the teacher, or in-focus, but behaving inappropriately.

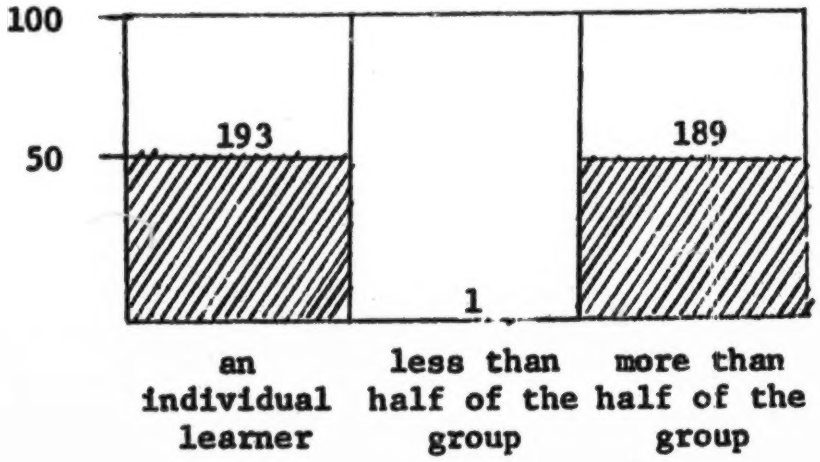
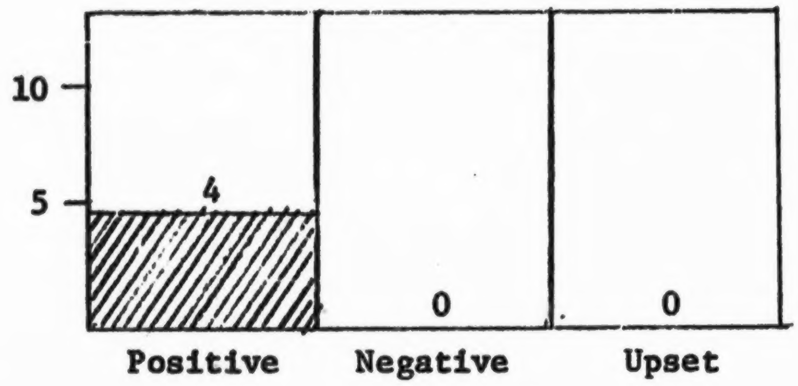
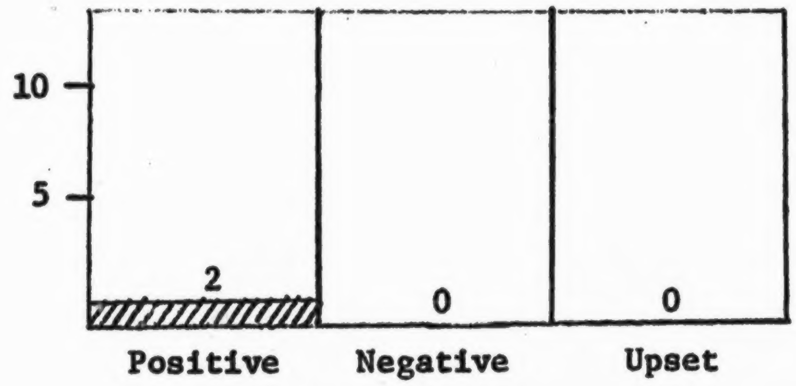


Figure 12. A graphic representation of the proportion of all teacher acts by recipient (the target audience the teacher sends the message to).



Teacher Acts



Learner Acts

Figure 13. A graphic representation of the instances of affect in the classroom for both teacher and learners.

Appendix B

Quotes from Teachers' Observations

The following categories are included in this report in order to show some of the feelings, reactions, and attitudes of participating teachers toward video taping:

1. Cosmetic effects:

   a. "I was laughing at myself sometimes, because of things that I said. I didn't realize I had said them until I saw the video tape."

   b. "Certain mannerisms bothered me. I wrote notes as I watched. I found myself waving my hands around and wondered if this was distracting."

   c. "Two or three little mannerisms about my own that had bothered me before (first taping) I thought I had conquered this time (second taping)."

   d. "Well, as soon as I signed up as a possible participant I started correcting a few bad habits....I realized how terrible they looked....I was aware of some of them, but I just hadn't taken the trouble to really concentrate on correcting them. But, the minute that I realized I would be seeing myself, I got busy and started getting rid of some of those habits."

   e. "The first time I was taped I didn't know what to do with my hands, but this time (second taping) I wasn't aware of them at all."

   f. "I thought I looked awfully sour standing up there for a whole hour.

   g. "I am going to work on my voice, which has a tendency to drop down at the end of a sentence...and I have a habit of sitting on tables swinging my legs back and forth. I am sure it distracted some of the children."

   h. "My voice was so extremely loud. This is one thing I need to improve on."

2. Verbal communication:

   a. "I talk too much when I should be keeping still. This is one fault I have that I am working on."

b. "I had some questions that were poorly stated....I also felt now and then that I was talking down to them."

c. "Part of my objectives was to get the class involved in a discussion and when they gave answers to support their questions, I noticed myself using 'that's great' and 'that's right'. I am going to see if I can't find another way of saying 'yes'."

d. "I should be more specific on directions....I need to enunciate more clearly....too much teacher talk."

e. "I criticized the students too much last time (first taping) ....I think I have corrected that completely in my classroom."

f. "I need to put expression in my speech, and I need to get the children to speak louder. I am trying not to repeat what a child says."

3. Reaction to video taping as a tool for self-instruction:

a. "....This is the most fabulous thing (video taping in classroom) that I have run across. I just wish every teacher would feel that it is a teaching tool and that each could benefit by it."

b. "It didn't make me feel that I was necessarily a very good teacher. But I don't think it shattered my self-image or anything like that. I didn't feel that I was incompetent either, but it did bring home to me that even though I am a reasonably experienced teacher there are still areas where I can improve."

c. "I would like to see that tape again because I realized that in some places I was almost putting the answers in their mouths, and I can't remember why I was doing that."

d. "I was really thrilled. I was interested to know some of my expressions. I hadn't realized that I showed so much approval and disapproval by my very expression, until I saw it on video tape."

4. Goal setting:

a. "Principally, I am going to work on getting a wider spread of response among the girls."

b. "Next time I plan to have more student talk and less teacher talk."

5. Performance evaluation:

   a. "I really felt that after seeing the third tape I was satisfied."

   b. "I really had the feeling that I had accomplished what I really and definitely wanted."

   c. "I wasn't as bad as I thought I was....I expected to be much more dissatisfied with myself than I was."

   d. "When I saw the tape I was really disgusted with myself."

   e. "We all have a concept of ourselves, and what I saw was very enjoyable."

   f. "The important thing it has done for me is that I no longer use criticism as a criticism."

   g. "I have the children, especially girls, volunteering this time (third taping) that haven't been doing it."

6. Sensitivity to classroom situation:

   a. "For instance, I noticed a girl swinging her feet back and forth because her short legs could not reach the floor. Then I changed chairs for her."

   b. "One boy constantly calls my name to get my attention, and I wasn't aware of it until I saw the video tape."

   c. "I noticed several little things among the children that I hadn't realized before.....One boy in particular that I almost considered a lethargic type was quite fidgety when I got to watching him."

   d. "When you see your class on tape you really become aware of what goes on."

   e. "Last time I noticed that every time a child said something I repeated everything he said. This time (second taping) I didn't do it as much. Of course, I have been watching myself."

   f. "I noticed a lot of students who just didn't pay attention and couldn't care less about what was going on....You really don't see it as much until you are watching all of them on the monitor."

Appendix B

Unexpected and unsolicited bonuses for the cooperating school district.

1. Teachers during the year of participation had the best attendance on record.
2. Teachers verified that children in rooms of participating teachers had the best attendance on record.
3. For the first time most participating teachers taught to objectives all year, not just for video taping.
4. Some students who rarely responded in class saw video taping as an opportunity to communicate; others, who usually responded freely, seemed more thoughtful and cautious.
5. Teachers attached much significance to the video tape observation of students in their bodily absence. The students' behavior was closely studied for clues and insights so as to deal more effectively with problems.
6. When all video tapes were completed in May teachers shared them with the students. Students tallied their participation, evaluated the lesson, and discussed ways and means of improving the program in their class.
7. In May of each school year many teachers shared their tapes with Parents and fellow teachers. While the enthusiasm and benefit gained from this experience cannot readily be measured it has, according to teachers' reports, a motivational effect on other teachers.

Appendix C

QUESTIONNAIRE

TEACHER SELF-EVALUATION PROJECT
1300 Western Boulevard
Corvallis, Oregon

June 1, 1968

Dear Teachers:

Now that the first phase of the Teacher Self-Evaluation Project has come to an end, we would be interested in your personal reactions to the video tape experiences. Please be frank. You need not write your name, only the group to which you belong.

Your comments are crucial to the planning of the in-service training programs in the coming years. Your comments will be kept in confidence. It should take approximately 20 to 30 minutes to answer the following questions:

1. Temporary effects on you as a person.
2. Permanent effects on you as a person.
3. Temporary effects on you as a teacher.
4. Permanent effects on you as a teacher.

We would suggest that you plan to complete it in one sitting with minimal distractions.

If we have not had the opportunity to tell you personally by this time, we certainly wish to thank you for your cooperation in all phases of this complex operation.

Sincerely,

Paul H. Jensen,
Director

OBSERVER RATING SCALE

GROUP________________________

SUBJECT______________________

OBSERVER_____________________

Independently rate each teacher on a scale from 1 to 9 in terms of the degree to which each of the following variables are reflected in their written reports.

---

(1) General attitude toward the project.

1				5				9
extremely negative				ambivalent or indifferent				extremely positive

(2) Felt that significant changes occurred in their teaching behavior.

1				5				9
no changes				moderate changes				extreme changes

(3) Felt that significant changes occurred in their attitudes toward teaching. (check here if negative____)

1				5				9
no change				moderate change				extreme change

(4) Felt that they had greater sensitivity to their students.

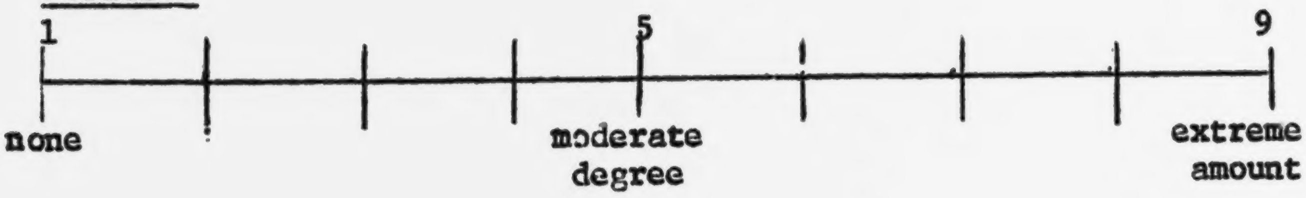
1				5				9
no mention of				moderate degree				extremely high degree

(5) Felt that they had become more aware of their own idiosyncracies or mannerisms in the classroom.

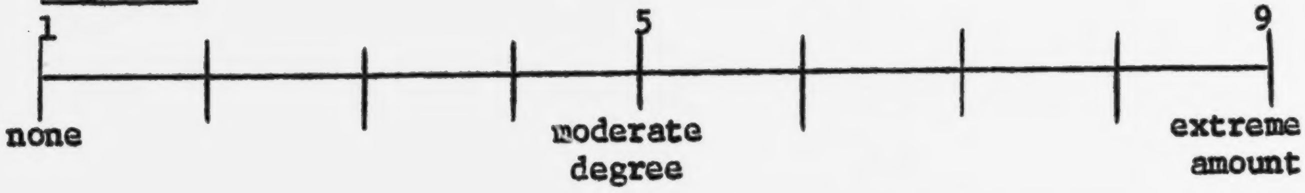
1				5				9
no mention of				moderate degree				extremely high degree

(6) Extent of self-evaluation noted. (Positive + Negative)

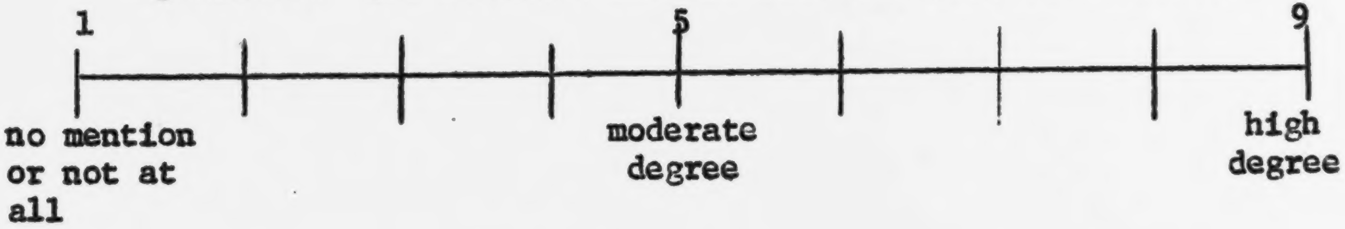
Positive


1
5
9
none
moderate degree
extreme amount

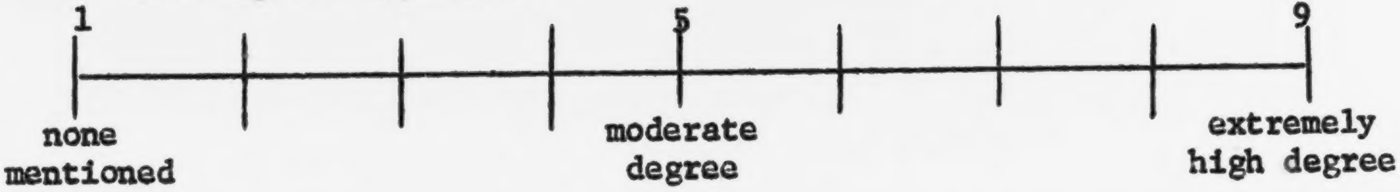
Negative


1
5
9
none
moderate degree
extreme amount

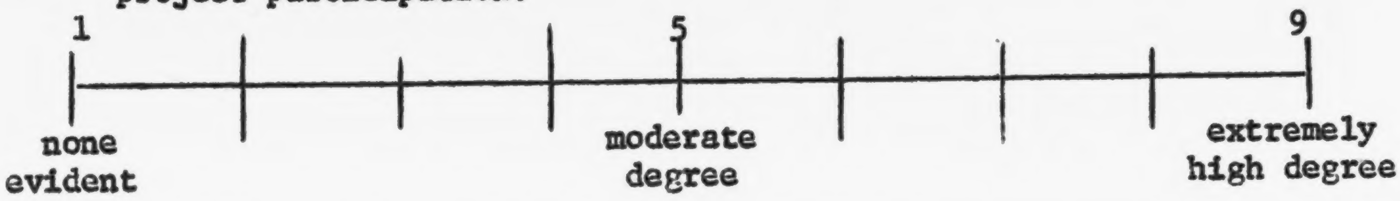
(7) The degree to which they felt that they had reached their teaching objectives. (As outlined earlier with the project director)


1
5
9
no mention or not at all
moderate degree
high degree

(8) Degree to which "desire" or "intent" to change (i.e., improve) teaching was expressed.


1
5
9
none mentioned
moderate degree
extremely high degree

(9) Degree to which apprehension or anxiety was expressed regarding project participation.


1
5
9
none evident
moderate degree
extremely high degree

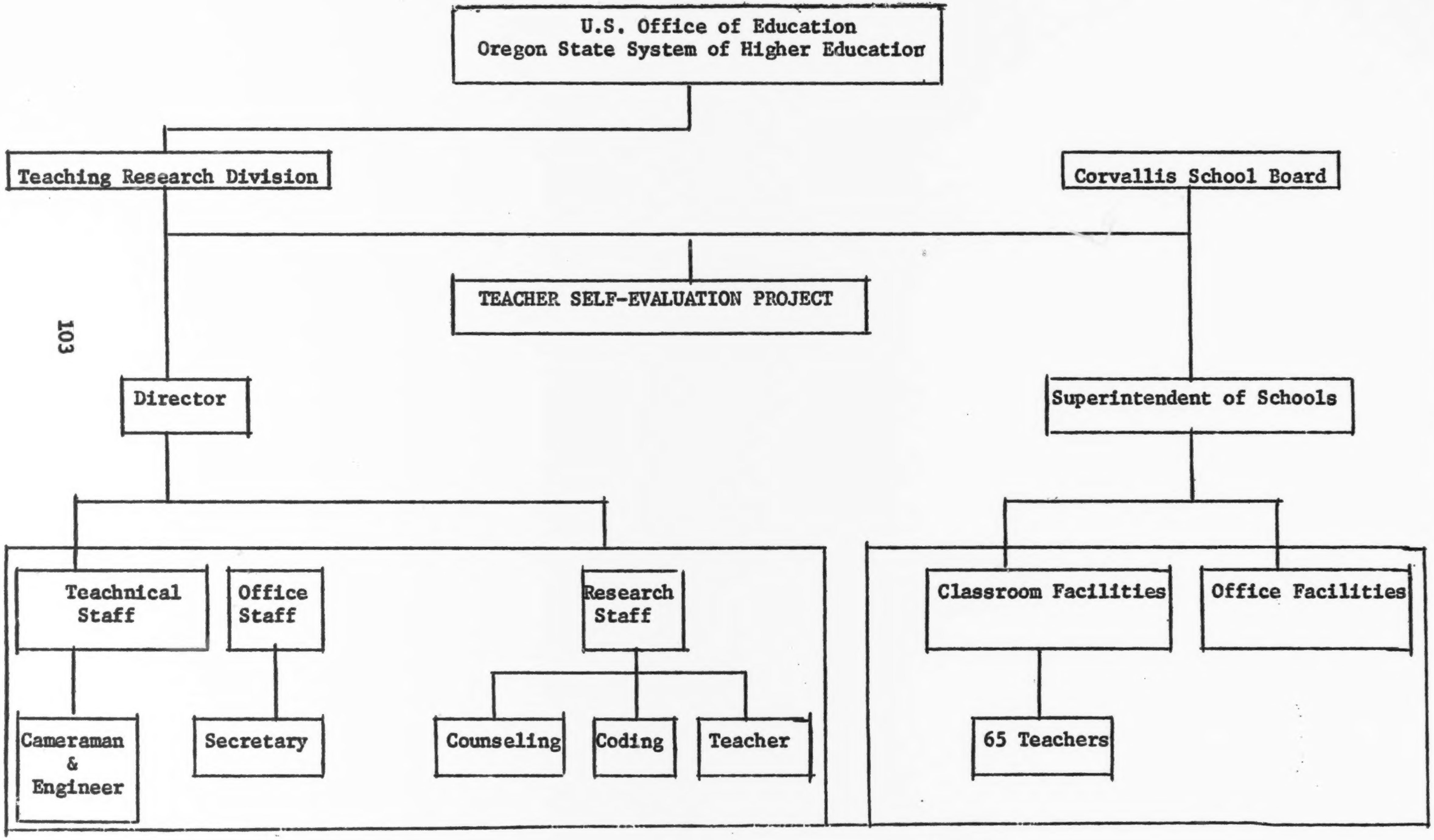
(10) Specific mention of the effect or value of the workshop at the beginning of the project.

a. Yes______ No______

b. Positive Statements_____ Negative Statements________

Appendix E

TEACHING RESEARCH DIVISION
ORGANIZATIONAL CHART FOR NATIONAL DEFENSE EDUCATION ACT
TITLE VII PROJECT
1966-1968


U.S. Office of Education
Oregon State System of Higher Education
Teaching Research Division
Corvallis School Board
TEACHER SELF-EVALUATION PROJECT
Director
Superintendent of Schools
Teachnical Staff
Office Staff
Research Staff
Classroom Facilities
Office Facilities
Cameraman & Engineer
Secretary
Counseling
Coding
Teacher
65 Teachers

Appendix F

VIDEO TAPE RECORDING EQUIPMENT

After project objectives and research design had been determined a thorough study was made of available equipment. An effort was made to find out which equipment could do the job and do it most economically? The following equipment has effectively served the purpose for which it was purchased:

1	Ampex VTR 7100 Trainer and Cabintry
1	Ampex VTR 7000 Video Recorder
1	Packard Bell Model 9200 view finding camera
1	Packard Bell Model 920 W/EIA Sync Camera
1	Quick-Set Sampson Dolly Model 7601
1	Quick-Set Husky Tri-Pod
1	Quick-Set Hercules Tri-Pod Model 5302
1	Quick-Set Hercules Dolly Model
1	Quick-Set Cable Guards Model
1	Pelco Model TT1 55S Pan and Tilt Control
1	Pelco Model TT12P Rack Mount Control
1	Ball Brothers Mark VI-A Special effect generator
1	Telechrome Model 3519a1 EIA Sync generator
1	Angenieus Zoom Lens 15 to 150 mm F2.8
1	Ampex 12.5 mm f1.4 Wide Angle Lens
4	Atlas microphone stands Model MS-10C
4	Shure Model SM56 Classroom microphones
1	Custom built Audio Mixer 5 channel
1	Vega wireless microphone Model L
96	Reels of Ampex 147-60 and 3M 1" Video Tape
2	23" ETV receivers Setchell-Carlson Model 2100 SD VHF only W/lock compartment
1	Circuit breaker panel (built into cabinet)

Total cost of equipment and tapes was $23,590.08

Appendix G

PROJECT ENVIRONMENT

Corvallis is a city of 30,000 population. It is the home of Oregon State University which has a student body of 15,000. The city is oriented toward more and better education and with a wholesome attitude toward research in education. Twenty miles to the north in the Willamette Valley is Oregon College of Education which is also the home of the Teaching Research Division serving all institutions of higher learning in Oregon as well as the public schools. Thirty miles northeast is Willamette University which has a student body of 2,000. In Eugene, forty miles southeast, is the University of Oregon.

In this education-oriented environment, Teacher Self-Evaluation was conceived in the minds of Corvallis teachers and administrators. Through the cooperation of the Teaching Research Division, it was written into a proposal to the U. S. Office of Education.

Corvallis School District 509J takes in all of the city of Corvallis and several country schools in Benton County. The district's 16 elementary schools, 3 Junior High Schools, and 1 High School all function under a five-man school board.

Appendix H

Rankings of Group Mean Differences Across Categories and Trial Changes (1 being low and 5 being high).

TREATMENT GROUPS

Cate-gories	Trial Diff.	Group 1	Group 2	Group 3	Group 4	Group 5
4	1-2	1	4*	1	3	5
	2-3	4	5*	1	3	2
	1-3	4	5*	1	2	3
9	1-2	2	1	4	3	5*
	2-3	2	3	1	4	5*
	1-3	1	1	4	3	5*
10	1-2	2	1	3	5*	4
	2-3	2	1	4	5*	3
	1-3	3	1	4	5*	2
11	1-2	4*	2	3	1	5*
	2-3	5*	1	3	2	4*
	1-3	5*	2	1	3	4*

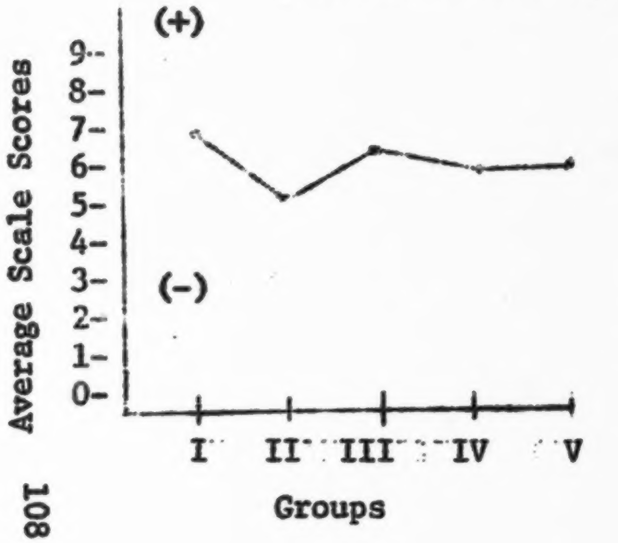
* highest for category

Rank Sums of Groups Over Observation Categories and Trials

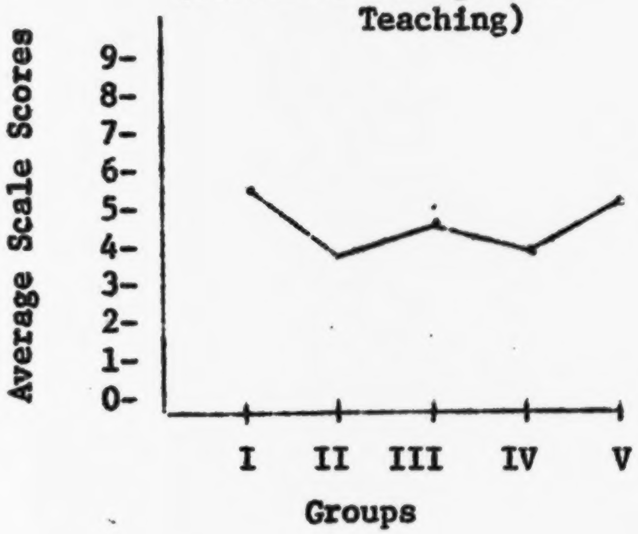
RANKS (within categories)	Group 1		Group 2		Group 3		Group 4		Group 5	
1's X	2	2	6	6	5	5	1	1	0	0
2's X	4	8	2	4	0	0	2	4	2	4
3's X	1	3	1	3	3	9	5	15	2	6
4's X	3	12	1	4	4	16	1	4	3	12
5's X	2	10	2	10	0	0	3	15	5	25
RANK SUMS		35		27		30		39		47
OVERALL RANK		3		1		2		4		5

Questionnaire Results

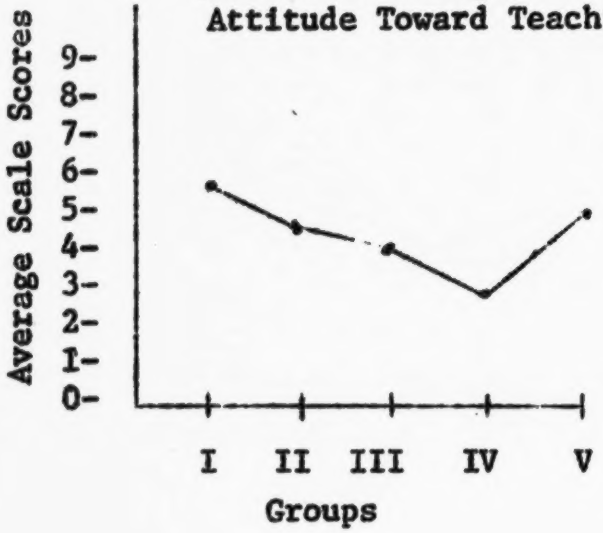
Question #1
(Overall Attitude)



Question #2
(Perceived Changes in Teaching)

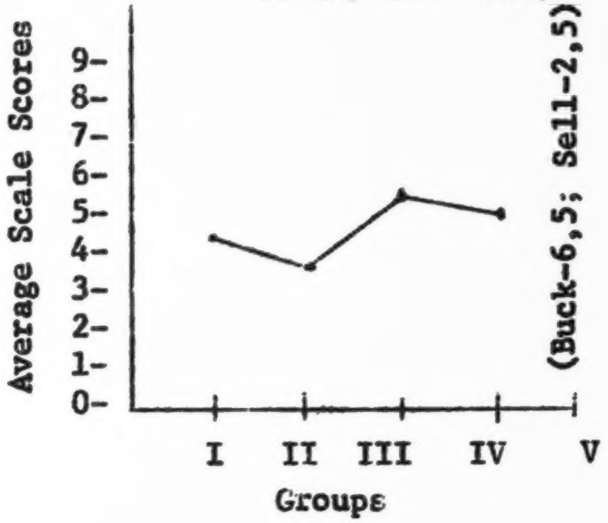


Question #3
(Perceived Changes in Attitude Toward Teaching)



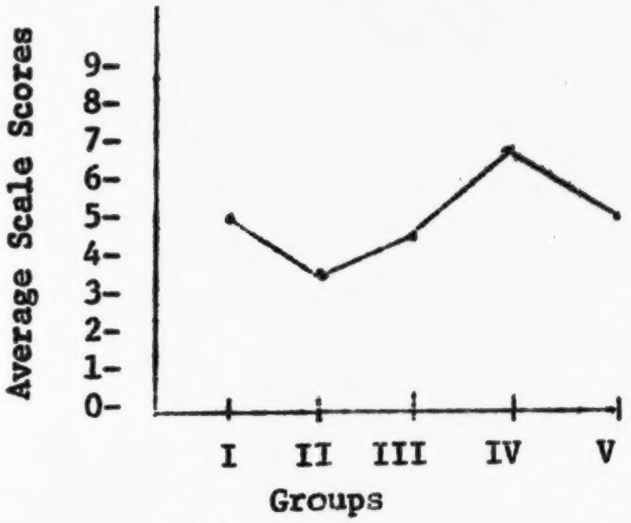
Question #4

(Increased Sensitivity Toward Students)



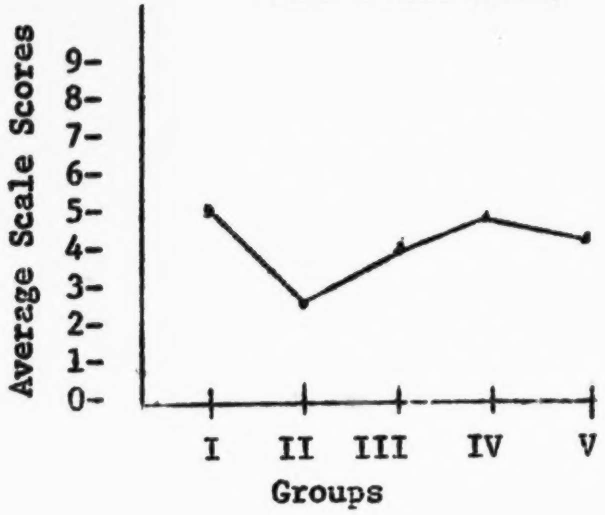
Question #5

(Increased Self-Awareness)

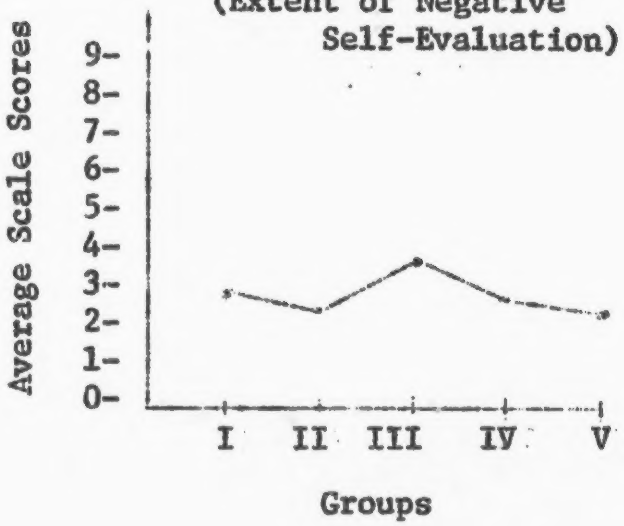


Question #6

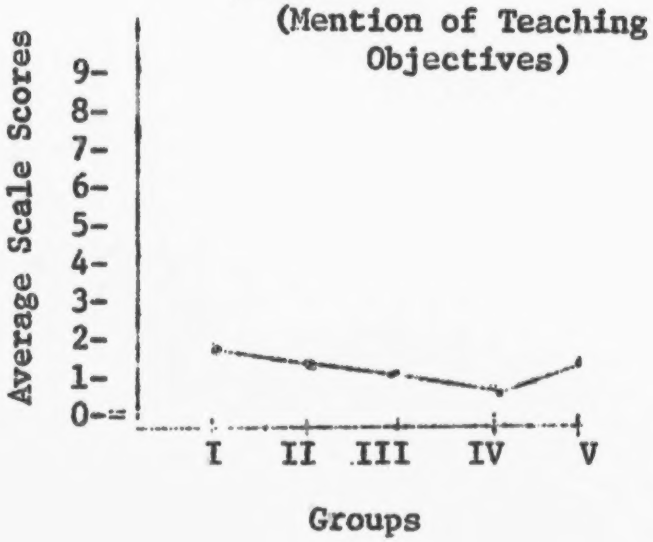
(Extent of Positive Self-Evaluation)



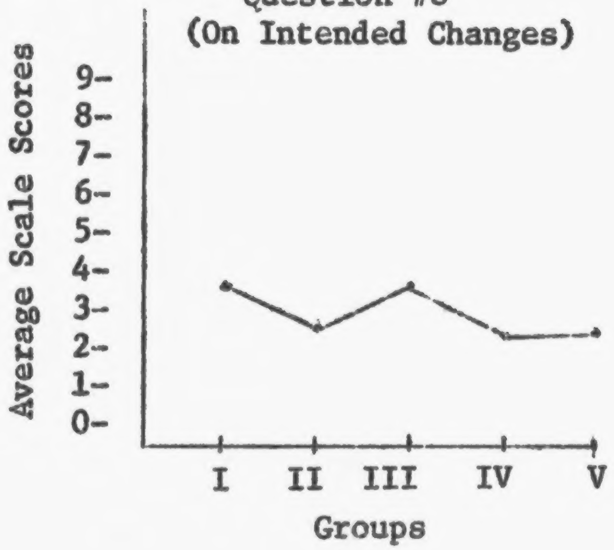
Question #6
(Extent of Negative
Self-Evaluation)



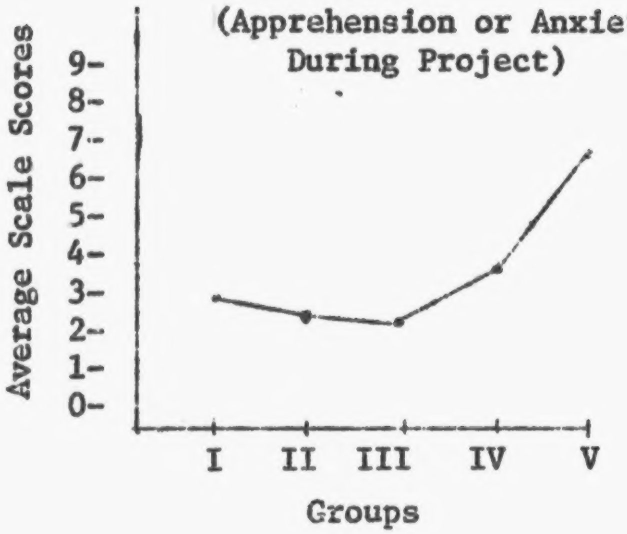
Question #7
(Mention of Teaching
Objectives)



Question #8
(On Intended Changes)



Question #9
(Apprehension or Anxiety
During Project)



Observer Reliability on items 1, 2, 3, 6a, 7, and 9 of the questionnaire rating scale. (See Appendix)

Item	Pearson Coefficient	Meaning of Item
#1	.86	Attitude Toward Project
#2	.37	Changes in Teaching
#3	.36	Attitude Toward Teaching
#4	.64	Sensitivity to Teaching
#5a	.36	Positive Self-Evaluation
#7	.09	Reaching Objectives
#8	.16	Intent to Change
#10	1.00	Workshop Value